October 2005

Use of costs to inform the funding of teaching

A report to HEFCE by JM Consulting and PA Consulting

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Introduction and overview

1. This report sets out the conclusions of a study commissioned by the Higher Education Funding Council for England (HEFCE) to assess the policy merits and practical feasibility of greater use of information on costs to support the public funding of Teaching in higher education. By this, we mean adopting funding approaches which recognise the actual costs of sustainable, high quality provision at the sector and institutional levels. We do not make recommendations on the future Teaching funding method (TFM), but we consider the changing context, objectives and options for the future TFM to assure the relevance of our advice.

2. We do not recommend cost-based approaches to future Teaching (T) funding that imply funding based directly on the costs incurred with no qualifications for results delivered, value-for-money, institutional strategies and the inherent circularity whereby costs incurred tend to reflect the funds available. We do however see significant benefits, for HEFCE and for the sector, from more cost-informed approaches in which the actual costs of delivering specific policy objectives are explicitly recognised in the funding model.

3. The current TFM is already cost-informed to an extent, in that it recognises the differing costs of disciplines, modes of study and types of students. However, the current model does not apply a single, consistent approach to the recognition of costs: cost structures are not defined or measured using a common framework across the sector, and the cost data used in the current model are often proxies, and not always consistent or robust.

4. We define three purposes, or cost objectives, for better use of cost information in this policy area:

    - to inform the total costs of sustainable publicly-funded Teaching
    - to inform the allocation of funding to institutions
    - to inform HEFCE policies and institutional management.

5. We propose a common national costing framework to address these three requirements, including underpinning the future TFM. We envisage that the future TFM will comprise a balance between three basic elements:

    - formula-based funding towards the ongoing provision of a ‘standard’ student experience
    - recurrent funding that recognises the costs of ‘exceptional’ levels of provision in terms of specific policy priorities (such as student diversity or particular institutional specialities)
    - strategic interventions, usually project-based and time-limited, to encourage investment in new developments which will benefit the whole sector.

6. Within these three blocks, HEFCE funding can be expected – as now – to be deployed primarily to support and encourage a number of aspects of sustainable provision of a high quality student experience, each of which has associated delivery costs reflecting institutional or student-led factors, or cost

drivers. These aspects, which reflect current and potential policy considerations, are:

- course provision (full-time equivalent [FTE] students) by discipline, at sector level, taking account of non-completion
- student diversity, especially provision for non-traditional or widening participation (WP) students
- non-standard delivery, offering additional benefits for extra costs
- part-time modes of study
- high-cost institutions, for example London weighting or historic buildings
- specific strategic initiatives.

7. These six aspects of T provision, and their associated cost drivers, are not intended to embrace every variable affecting delivery costs for institutions. However, they are the most significant in terms of their relevance to policy objectives, their materiality to the total costs of delivery and the availability of reliable cost data without imposing unreasonable new burdens on the sector. We are not advocating that HEFCE should make specific provision for each of these six aspects in its future funding, nor that all of them need to be costed in equal levels of detail by all institutions. However, understanding of the costs and drivers for all six aspects will be necessary to inform the future TFM, HEFCE policy development, and institutional good management.

8. The feasibility of securing this information without adding to the bureaucratic burdens on institutions is greatly aided by the adoption across the higher education (HE) sector of the principles and methods of the Transparent approach to costing (TRAC), which has created an information asset, and costing expertise in institutions, which was not available when the current TFM was designed. We believe that the TRAC approach can be readily adapted, with little additional burden for institutions, to generate the information needed by HEFCE and by individual higher education institutions (HEIs), under each of the six cost categories we have proposed. In many cases, the work involved can be pursued through mechanisms such as samples of institutions, pilot studies, use of relative or standard costs, so that the burdens on institutions will be small, and certainly of less magnitude than their current implementation of TRAC/full economic costing (fEC) for Research.

9. Our report considers in some detail the costing principles and techniques needed to establish a common costing framework, built on TRAC, to underpin and inform future TFM decisions. The main recommendations from this assessment are set out in the following 'Summary of conclusions and recommendations'. The structure of the report then broadly follows the terms of reference:

    - chapter 1 reviews the policy background to the funding of Teaching, and the case for using a cost-based approach to inform a TFM

    - chapter 2 reviews the use of cost information to inform funding and discusses the possible different contexts of the TFM in the short- and medium-term future

- chapter 3 makes proposals about the costing principles and approaches to be used and identifies the cost drivers which we recommend should inform the TFM and institutional management

- chapters 4 and 5 propose viable and practical methods to be used for each of these cost drivers.

JM Consulting and PA Consulting
September 2005

1. Policy background to the funding of Teaching

1.1. In this chapter, we review the context for the possible greater use of cost information in the funding of Teaching, and look at the policy arguments for and against this.

1.2. The TFM review is intended to lay the foundations for recurrent funding of Learning and Teaching for the next 10 years or more. Any significant changes in costing models that require all HEIs to make changes (such as in TRAC) can also have a long timeframe (typically a minimum of three years).

The changing purposes and context of HEFCE's T funding

Aims

1.3. In April 2005, the HEFCE Board agreed a set of broad aims as a statement of the policy areas that its funding of Teaching should support. The aims are:

a. ensure an appropriate capacity of Learning and Teaching in HE at a sector-wide level

b. ensure and promote a high standard of Teaching quality and academic standards

c. enable Learning and Teaching in HE to respond to the needs and demands of diverse students, business and wider society

d. enable the higher education sector to provide innovative learning and Teaching opportunities

e. enable the higher education sector to make learning and Teaching opportunities accessible to all those who could benefit from them

f. enable the higher education sector to make best use of public money to enhance the student learning experience.

Role of HEFCE funding

1.4. HEFCE's T funding can be deployed in at least three different ways, which reflect differing views about the role of the funding.

1.5. In one sense, HEFCE can be seen as a purchaser of learning and teaching services within the market (just as, for example, the Teacher Training Agency and Department of Health also purchase teaching services from HEIs).

1.6. In a second sense, HEFCE can be seen as managing the supply side of the market – for example, intervening to mitigate areas of 'market failure' by protecting the sustainability of capacity or institutions, and promoting features like equitable access and particular types of provision which would

not otherwise be delivered by the market alone.

1.7. In a third sense, HEFCE could be seen as a co-investor with HEIs, typically in strategic initiatives, helping them to bear risk and to deliver features such as levels of supply and sustainability, which they might not be able to do unaided.

1.8. Funding is one of the most powerful drivers of institutions' behaviour, but it is useful to remember that funding is not the only policy mechanism available to HEFCE.

The role of HEFCE funding

a. HEFCE recurrent (block grant) funding of Teaching and Research makes up only about 40 per cent of total institutional income. This proportion has been falling in recent years, and will fall further from 2006 as higher student fees are phased in.

b. Funding is only one of several mechanisms which HEFCE uses to influence institutional behaviour. Other mechanisms include:

- special initiatives
- grant conditions
- financial memoranda
- other funding streams – such as L&T Capital, quality-related research funding, Higher Education Innovation Fund and the Science Research Investment Fund
- peer pressures – league tables, performance indicators and benchmarks
- good practice, advice, etc.

c. Funding can, in principle, be directed:

- to recompense institutions for actual or standard costs incurred (that is, cost-based funding)
- to recognise where costs are incurred but not to claim to reflect them fully (perhaps cost-informed)
- as a policy stimulus or incentive (not necessarily cost-related) for particular desired behaviours.

d. And funding can, in principle, be used to purchase any combination of:

- capacity (supporting the recurrent costs of basic provision)
- operations (institutional activities for inputs and/or processes)
- outputs (numbers of completing students)
- outcomes (contributions to social or economic policy objectives)
- changes in any of the above.

1.9. HEFCE funding is a mix of formulaic core funding, plus additional premiums or special funding which may be formulaic or not. The balance of core and non-core funding is an important funding policy issue discussed in chapter 3.

The context for higher education funding

1.10. There is a strong international trend towards more market-based systems in higher education, and in some respects (such as sponsored research and international students), the market analogy is a close one. This represents a change in the sector context for the TFM since the current system was designed in the mid-1990s. In general, the direction of evolution in England (as in many other developed countries) is towards more autonomous HEIs, operating in a more market-driven environment, and with public funding being just one of a number of sources of institutional finance.

1.11. Of course, the market analogy is far from complete. The main HE teaching 'product' of a degree, requires a partnership between the customer and the supplier; suppliers may put in greatly varying levels and types of resources to obtain apparently similar outcomes; some outcomes such as social and community benefits are also the outcomes of a very complex relationship between institutions' 'customers' and the cost-related imperatives and incentives that they perceive.

1.12. A particular feature of government and HEFCE policy towards HE in recent years has been a marked shift in emphasis from supply-side policies concerned to assure sustainable provision of HE capacity (and institutions), to a focus on students and student-centred outcomes. This typically involves encouraging institutions to give primacy to providing a high quality, relevant, responsive and inclusive student experience to a more diverse customer base than in the past (policy-related outputs).

The use of cost information in the funding of Teaching

1.13. HEFCE's current TFM recognises costs in a number of ways. For example, some parts are driven by information about extra costs of specific types of provision (such as the funding for WP) or by the relative costs of different disciplines (in the price bands). The TFM also uses proxies for cost (such as length of study), and, generally, expenditure is used as a proxy for costs.

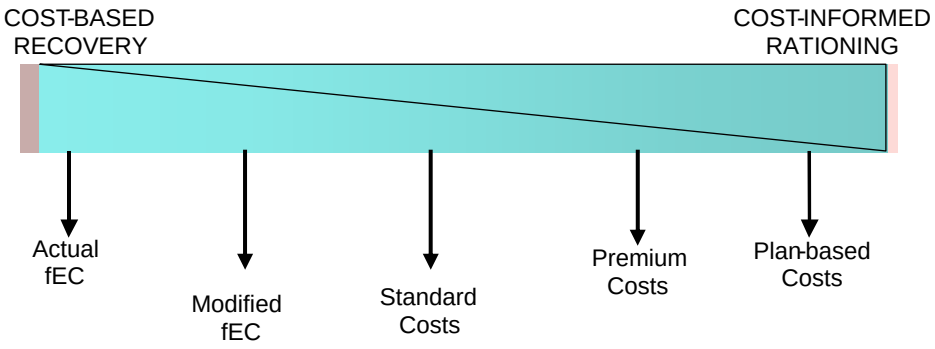
1.14. This is not a criticism. There is no single right method of reflecting costs in the teaching funding model. The appropriate way to use cost data will vary for each application, and will always involve a balance between burden and benefits. It will generally cost more to provide more robust cost data, and HEFCE has to make a judgement about whether the benefits that flow from a more fully cost-informed TFM outweigh the extra burden on institutions.

1.15. This set of relationships is illustrated in Figure 1. As the figure shows, there is a spectrum of different ways of using cost information to distribute recurrent funds, from full-cost recovery at one extreme to cost-informed rationing at the other.

1.16. It is worth noting that there is no part of the current TFM which is completely cost-based in the sense that the absolute level of funding is determined by actual costs established on a rigorous and systematic basis across the sector. In practice the current TFM occupies the middle part of the figure where there is an element of rationing (because total resources available

are not driven by costs). This is based on standard costs or relative costs established using sources of cost information already available, or through one-off surveys, taking account of the need to avoid burdens of additional data collection on institutions.

Figure 1: The spectrum of cost-related funding methods



Method	Features
Actual fEC	Funding based on total actual costs incurred by each provider for eligible activities or outputs
Modified fEC	Funding for actual fEC of delivering eligible provision, weighted to reflect policy priorities or institutional plans
Standard Costs	Funding based on standardised assumed costs for categories of delivered provision
Premium Costs	Funding to recognise and encourage/reward additional costs incurred for special features of provision (delivered or planned)
Plan-based Costs	Allocation of available funds based on forward plans of institutions for eligible provision

1.17. As part of our work, we conducted a brief review of funding in other countries, and we found no example of a fully cost-based system in the sense of the left hand end of Figure 1. Generally, the HEFCE method is amongst the more sophisticated cost-informed approaches in use.

Information on the costs of higher education activity

1.18. The environment for costing in UK higher education has changed radically since the present TFM was designed in the late 1990s. The major change has been the development and implementation of TRAC (the transparent approach to costing) and the emergence for the first time of consistent information on the cost of Teaching across all English HEIs.

1.19. TRAC was introduced in 1999 as a result of the Transparency Review, conducted for Government in that year. Most HEIs began to determine and report costs of their five main activities (Publicly funded Teaching and Research, Non-Publicly funded Teaching and Research, and Other – PFT,

PFR, NPFT, NPFR, O) from 2001 – reporting on activity and costs in the previous financial year.

1.20. TRAC had a five-year implementation timetable as some aspects of the implementation are complex (space costing for example). In 2003, an external review of TRAC was conducted for HEFCE (to check the soundness of the methods used), and in 2004, an external quality assurance process was introduced to check institutions' progress with implementation, and the robustness of their costs. These confirmed the basic soundness of TRAC, and that institutions were making good progress in implementation.

1.21. Since 2003-04, the sector has been working on a second stage of implementation, known as TRAC/fEC, which was prompted by the reform of the Dual Support System of research funding, and the need for forward-looking estimates of project costs on a full economic cost basis.

1.22. Institutions are now implementing TRAC/fEC and will start to submit grant applications to the Research Councils and other public funders on this new basis from September 2005.

1.23. TRAC has not yet been used across the sector for costing Teaching below the whole institutional level, although a few institutions are doing this. However, having TRAC in place has facilitated a number of one-off national studies of Teaching: for example we (JM Consulting) have costed off-campus modes of delivery and WP for HEFCE, Initial Teacher Training for the Teacher Training Agency (TTA, renamed the Training and Development Agency for Schools as of 1 September 2005), and nursing and health professionals' education for the Department of Health. HEFCE has recently used TRAC approaches to look at the costs of media and sports science; and current studies of the costs of chemistry and physics are also using a TRAC-based approach.

1.24. A further impact of TRAC is that the existence of information on the costs of activities at the level of academic departments has provided institutions with a new set of management information to aid academic planning and decisions. Some institutions are restructuring their internal resource allocation and strategic planning mechanisms onto a 'full costs and income' basis and this could, over time, have significant impacts on the way they view their portfolio of activity.

The case for reflecting costs in the TFM

1.25. There are a number of reasons for seeking a more explicit and transparent recognition of institutions' delivery costs in the TFM and in associated HEFCE policy consideration, notably:

a. **Sustainability**: to provide assurance that providers are able to deliver good quality products for the funds provided, without damaging their future capability.

b. **Transparency**: to make more explicit and justify the price paid by HEFCE for the activities and outputs delivered; and ensure it is seen to be fair and

equitable. This could be seen, in turn, as an element in improving accountability.

c. **Flexibility and diversity**: to make it economically rational for providers to respond to policy priorities that add costs (for example, WP students), and to recognise the inherent cost differences when more costly institutions provide valued services.

1.26. As noted above, it is quite rational to adopt funding methods which are not closely informed by costs, and this has to some extent been unavoidable in the past. However, this has risks that institutions will engage in behaviour which is perverse in terms of other HEFCE policy objectives. The clearest case of this has been in respect of externally-funded research where the absence of a clear and explicit recognition of costs by funders has led many institutions to accept contracts which, strictly, they cannot afford, and this has undermined other policy aims such as sustainability of the UK research base.

1.27. Analogous warnings could be advanced for Teaching (e.g. noting the way that institutions accepted fees-only students in the 1990s, or accept partial funding of some types of provision or initiatives without having determined how they would provide the matched funds). Now that the principle of cost-based public funding of research has been established, this provides a strong argument to at least consider a comparable treatment of publicly funded Teaching.

1.28. There are a number of potential drawbacks to a cost-based funding method that is one in which funding is closely driven by costs, including:

a. **Circularity**: to a large extent, the costs of teaching provision are driven by the level and terms of funding provided, so that cost-based funding could become self-referential.

b. **Heterogeneity**: there is very limited sector-wide standardisation of the content and processes embodied in the HE product between providers, making it difficult to compare what is funded between different HEIs (and hence to differentiate diversity).

c. **Impacts**: since the TFM provides only part of any institution's available sources of funding for Teaching, the impact of a cost-based system on the sustainability of provision will vary greatly across institutions.

d. **Efficiency**: if funding follows costs, the incentives for providers to seek more cost-effective delivery methods are potentially weakened.

e. **Burden**: any cost-based funding system is likely to require additional data gathering and verification activities, imposing extra costs on the system.

f. **Affordability**: if the level of funding made available from the overall HE Spending Review settlement does not cover costs, the methodology and indeed the whole funding relationship will be questioned.

1.29. Of course, none of these drawbacks (except possibly burden) apply to a much greater use of cost information to inform (as opposed to directly drive) the funding of Teaching.

1.30. It has been a major thrust of government policy and HEFCE action in recent years to encourage HEIs to be more financially aware and to use better financial information and analysis in their academic strategies and decisions. We see improved cost information as highly beneficial to support these policy aims, irrespective of its impact on the TFM.

1.31. The objectives for the future TFM are discussed in chapter 2. In general terms, the aim is to secure the benefits of sustainability, transparency, incentives and diversity while avoiding or minimising the drawbacks we have listed.

Conclusions

1.32. In respect of the environment for public funding of HE Teaching, we conclude that:

a. There is a complex and changing environment, but there is a clear direction of travel – we can assume that the trend towards a greater market-based state will continue, although it is difficult to predict how fast or how far this will go in the near future.

b. The role of HEFCE funding is changing, and in the medium term, the TFM may need to look significantly different if it is to permit HEFCE to squeeze more value out of the declining proportion of direct public funding. We review appropriate assumptions on this in chapter 2.

c. Better use of cost information can deliver valuable benefits for the sector, but there are also potential drawbacks and difficulties in a more directly cost-based approach to funding. These are less acute if funding is to be cost-informed rather than cost-based, but an element of transparency could then be lost.

d. Any changes will need to be carefully targeted in terms of the benefits they deliver while taking account of, and preferably reducing, the burdens on institutions.

2. The use of costs to inform HEFCE policy and funding

Cost objectives to support HEFCE funding of Teaching

2.1. Following the aims in paragraph 1.3, HEFCE needs cost information for three distinct areas of funding policy: overall costs of sustainable provision; to allocate resources to institutions; and securing value for money and good management practice.

2.2. The policy and costing features of these three areas (which we are calling cost objectives) are outlined in the following paragraphs. They are illustrated in Figure 2.

2.3. The types of cost information needed at these three levels are not exactly the same, but they clearly overlap, and there is potential value in seeing the three cost objectives as part of a single integrated or coordinated requirement so that any burdens associated with collecting this information are minimised, and there is national consistency of data quality.

Cost objective I: To inform national policy on the costs of sustainable Teaching

2.4. The total cost of HEFCE-fundable Teaching informs the requirements for the total quantum of Teaching funding at sector level. This is central to HEFCE policy even though it may not directly drive funding. It is central in at least three ways:

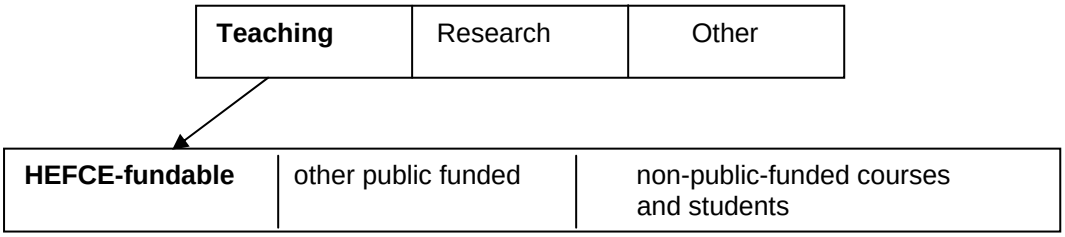
- it informs the total funding requirement of the sector
- it provides a basis for considering the sustainability of the sector (such as by comparing costs with funding)
- it provides a basis for considering the relative costs, efficiency and sustainability of individual institutions (for example, by making high-level comparisons of costs, volumes and funding, etc).

2.5. Identifying the total costs of Teaching and Research at institutional and national levels was one of the original government questions which led to the design of TRAC, and TRAC can be used to produce this information to support HEFCE needs, with a little development. So this cost objective is deliverable with minimal extra burden for institutions.

2.6. TRAC will provide full economic costs of Teaching which are based on actual historic costs, but include the cost adjustments, and so this approach addresses the concept of sustainability of the activities as costed. However, it does not directly address the policy issues around efficiency and value for money, and we consider in chapters 4 and 5 how the data collected can also provide information to support these requirements.

Figure 2: Cost objectives to inform the funding of Teaching

I. The total cost of publicly funded Teaching and Learning – each HEI, and whole sector



II. The allocation of resources to institutions

IIa. Formulaic or contract funding of teaching activity (TFM)

IIb. Non-formulaic or bid funding of one-off or strategic variations

Consistent core	**Fundable recurrent variations**	**One-off/Strategic**
The standard high quality UK HE student experience At all HEIs	**exceptional student diversity (e.g. WP, PT)** **exceptional high-cost institutions (e.g. small, London, historic buildings)** **exceptional provision (e.g. strategic subjects, WPL, national facilities)** At selected HEIs	**Innovation (bids for new centres/good practice)** **Responsiveness (bids for new initiatives)** **e.g. CETLs, Lifelong Learning Networks**

III. To guide or inform good management and practice in institutions and achievement of other policy objectives not directly fundable

Internal resource allocation
Efficiency/value for money
Excellence
Sustainability/capacity
Diversity
Flexibility

Cost objective II: Supporting the allocation of public funding to institutions for Teaching

2.7. The main focus of this study is around this second set of requirements, which incorporates the TFM and allocation of a major part of all teaching funding. However, as Figure 2 shows, there are other allocation mechanisms which are not part of the TFM (such as special initiatives and strategic funds) and these too could, in principle, be better informed by costs.

II a. The TFM, core and non-core funding

2.8. It is generally accepted that it is helpful to think of two elements to formulaic funding: a core allocation and variations on it. The balance between them is a matter of policy interest and will continue to evolve.

2.9. In most policy discussions, it is accepted that the core should embrace the standard good quality UK higher education experience, which every institution funded by HEFCE is expected to deliver.

2.10. It follows that the core embraces the normal variations that would be expected at, and between, institutions delivering a good quality UK HE experience. So it should include elements of WP, scholarship, research, innovation in Teaching and learning methods, a range of disciplines, a range of levels and modes of study, as appropriate to the type of institution.

2.11. Core funding is popular with institutions because (in theory) it gives them the maximum autonomy over how they spend. From HEFCE's point of view, this can lead to creative use of resources.

2.12. Non-core funding is by definition more directed – special initiatives are generally less popular with institutions, but they may enable HEFCE to attract and direct additional sums of public funding to specific policy objectives.

2.13. In terms of using cost information, the core poses a problem in that it is not easy to define what it includes (what has in previous studies been called 'the specification'), which is a prerequisite to establishing its costs. Any prescriptive definition would be academically contentious (and could be unhelpfully reliant on current teaching pedagogy and institutional cost structures). The pragmatic approach may be simply to say the core is what is left from the global Teaching activity when all the exceptional variations are excluded.

2.14. The core concept links to the block grant principle, and also to the notion of equity (or similar funding of all institutions). There is a strong view in HEFCE that the core should be as large as is practical – it is currently approximately 90 per cent in England, although we note it is significantly smaller in Scotland. It is a strong feature of the current HEFCE TFM that core funding is based on simple and transparent drivers – this provides openness and predictability for institutions, but it can be seen to have two accompanying drawbacks:

a. Most institutions replicate the HEFCE cost weights in their internal resource allocation models (RAMs). This enables different academic departments and activities to receive their resource 'as it was earned'. However, these may not be the right costs for any particular institution, and this can tend to fossilise the historical patterns of delivery within institutions and reduce the incentives to greater efficiency and innovation.

b. In order to ensure equity in a very diverse sector, the TFM becomes complex and much attention is focused on what can or cannot be achieved by the algorithms in the TFM. This could be seen as unhelpful to lateral policy thinking in HEFCE.

2.15. Once the core is funded, the fundable variations to the core are in two parts, recurrent, and one-off.

Recurrent variations

2.16. These include factors that add extra costs for providers, which HEFCE regards as valuable and worth funding, and which can be funded on a continuing formulaic basis. The main variations in this category are:

a. exceptional student diversity (such as WP at those HEIs which incur costs well above the norm)

b. exceptional high-cost institutions (due to London weighting, (small) size, historic buildings for example)

c. exceptional provision (such as strategic subjects, workplace learning, and national facilities such as museums and the flying laboratory).

2.17. In principle, these exceptional items can all be costed, although there will be issues about robustness and burden. The funding in this category is at present not directly cost-based so much as cost-informed. Better cost information here could help a move towards the left end of the spectrum in Figure 1.

2.18. HEFCE could use these allowable variations or contract enhancements as a way to reward and purchase different (and necessarily higher cost) benefits at some institutions where these contribute to its policy objectives.

Non-formula funding (one-off, or strategic initiatives)

2.19. The second type of non-recurrent variations could be called strategic initiatives or innovations. These are generally not suitable for funding on a continuing formulaic basis, but more appropriately by bidding or other processes informed by costs. Centres for Excellence in Teaching and Learning (CETLs) could be an example, or collaborative ventures, or special initiatives to support particular types of provision.

2.20. Cost information in this domain is likely to be on a forward-plan basis (like the fEC of research projects) rather than an actuals basis, and in most cases, the information may be less robust than that underpinning the TFM.

2.21. Cost information could help HEFCE to budget (what level of funding is needed for a strategic initiative?); to compare and evaluate bids; and generally to inform policy and value for money, but it is unlikely directly to drive funding. However, institutions will increasingly find it difficult to accept that these initiatives should not be costed on an fEC basis, which will expose any differences between cost and funding.

Cost objective III: Supporting good practice and management

2.22. The third cost objective relates to non-functional policy objectives such as excellence and value for money, which are probably not amenable to being addressed through any form of direct funding. Of course, there could be specific funded strategic initiatives in these areas, or indeed a notional element in the core to support efficiency and quality improvement etc. But these would be funded as an incentive rather than directly cost-based.

2.23. Cost information may be helpful for policy here, but it is of a different type (such as benchmarking for efficiency, one-off studies for quality, and sustainability). It is also a HEFCE objective to encourage institutions to make better use of cost information in their own internal decision-making.

Approaches to the formulaic funding of Teaching

2.24. The current review of the TFM may lead to changes, and we have to be prepared for the fact that the future TFM (certainly in the medium term) may need to differ significantly from the current one. In order to advise on viable cost approaches we do not need to know exactly what the future TFM will look like, but it is helpful to have some idea of the likely types of change. In order to test the range of possibilities, we have considered three hypothetical but plausible funding scenarios. In all of these we use a 'three-box' model to represent the elements of funding (fees, core funding, and contract funding). These are illustrated in Figure 3.

2.25. The three models are:

- model A: the current TFM, perhaps simplified or improved
- model B: a single tariff model with funded exceptions
- model C: a managed market model.

Model A: Current TFM – multiple tariff, core plus premiums

2.26. Under the current TFM, core funds are distributed in a way which reflects the specific characteristics of each HEI's provision – that is the numbers of each type of student (full-time/part-time, class-room/laboratory/mixed lab/clinical, WP etc).

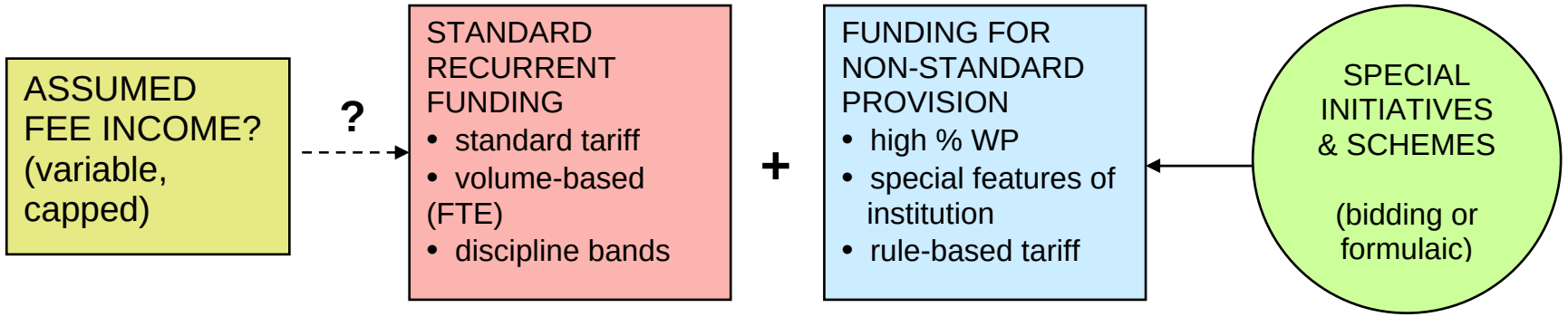
2.27. This model has been evaluated as part of the current review of the TFM and its advantages and drawbacks are summarised elsewhere[1]. However, a key

[1] In SQW Ltd's evaluation of the funding method: http://www.hefce.ac.uk/pubs/rdreports/2005/rd06_05/

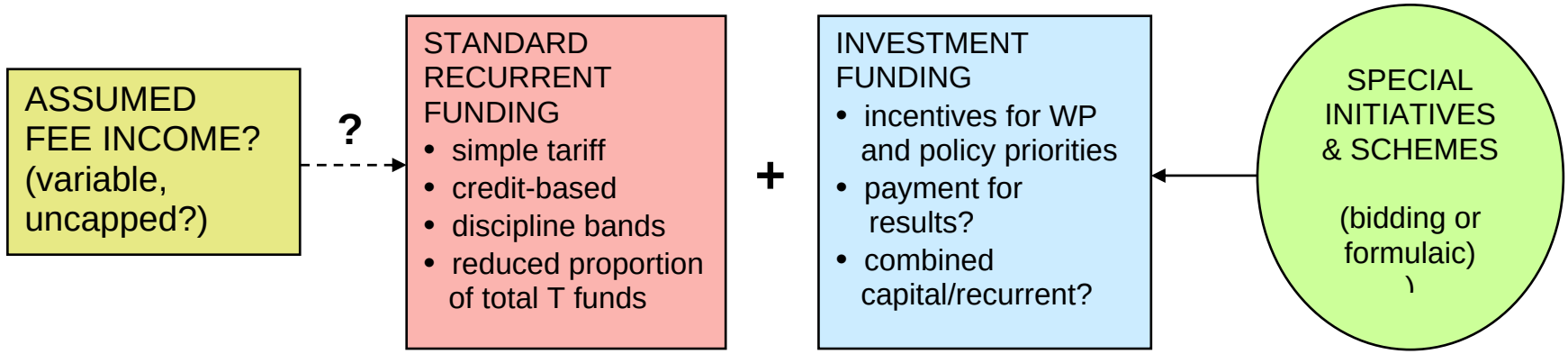
point for this study is that it requires detailed annual collection, reporting, and auditing of data, and the burden of this could increase if it was decided to move towards a more cost-based approach.

Figure 3: Alternative approaches to T formula funding

Model B – simplified TFM



Model C – strategic investment funding



2.28. For convenience, we might refer to this type of model as a multiple-tariff, core plus premiums model. Costs can be used to inform the impact (weighting) of each characteristic – and the cost information currently available for this could be improved.

Model B: Composite single tariff model (with fundable exceptions)

2.29. The second model, shown in Figure 3 as 'simplified TFM', is a variant in which higher student fees are in place. Core funds would be distributed, according to student numbers, but assuming that most institutional provision can be described as falling within an average range of types (for example, it has a broad spread across discipline types, a number of part-time students within the normal range, a broadly average proportion of WP students etc).

2.30. This provision could be funded using a single standard unit price for each student – building up a total core T funding for each institution based on current volumes of students. This standard price could remain in place for a period (say three to five years), so that core funding would vary simply with total student numbers. Data collection could therefore be less detailed and less frequent, and institutions would have a much simpler way of forecasting funding.

2.31. Institutions with provision which fell outside the average range (if they had a much higher proportion of WP or part-time students, or other exceptional features for instance) would receive additional non-core funding as a contract variation.

2.32. This model would require the same type of cost information used to inform the current TFM – in order to determine what the costs of exceptional levels of provision might be. However, the standard price would reflect only a high level aggregated cost per normal student.

2.33. This approach could:

a. Streamline the annual calculation of institutional funding and reduce the burden of annual reporting by institutions.

b. Encourage institutions to make their own plans and decisions about internal resource allocation (rather than replicating the HEFCE factors, which would now be much more aggregated).

c. Give stable funding for many years to institutions, subject only to their overall student recruitment.

2.34. There could be a concern that institutions might feel an incentive to switch from relatively higher cost to relatively lower cost provision (since once the pattern had been established every extra student would bring in the same unit of public funding). This could be overcome by some kind of contractual agreement about the broad balance of provision.

Model C: Longer-term market financing approach – the TFM as a market shaping model

2.35. We expect that in the medium term (that is, if the cap on variable fees is lifted), HEFCE might wish to consider some more radical changes to the TFM to reflect the very different market in higher education.

2.36. Arguably, this is too far ahead and too speculative to be a major driver of our work in this study. However, the lead time for significant changes to TRAC could be of the order of three-to-five years, and it would also make sense to ensure that any shorter term and more incremental changes to the TFM at least facilitate, rather than hinder, the probable longer term direction of evolution.

2.37. HEFCE's strategic objectives for Learning and Teaching are essentially about improving the student experience and opportunities provided by the HE system, with regard to:

- widening participation and access – promoting individual opportunities, progression and achievement
- excellence – high academic standards and internationally recognised qualifications
- diversity – meeting the needs of a diverse student body
- relevance – supporting graduate employability and employer needs.

2.38. Future TFM funding could, therefore, work to incentivise and reward provider behaviours that emphasise and develop high quality student experiences, by making funding levels (at least partly) dependent on the delivery of results and benefits in these areas.

2.39. At the same time, institutions are expected to maintain a high quality basic delivery capacity (infrastructure) and need assurance of funding for this. Capacity might include adequate levels of qualified staff, fit-for-purpose buildings, libraries and learning facilities, good ICT, and sound basic management processes.

2.40. This suggests a possible eventual structure for the TFM, deployed alongside variable student fees and project-based initiative funds, as shown in Diagram A.

2.41. Models B and C are also illustrated in Figure 3. We are not of course either assuming that any of these changes will happen or recommending that they should.

Diagram A: Possible TFM structure

Core/capacity funding	• Factor-based, formulaic allocation • Rationing model, cost-informed • Continuity and stability year-on-year • Value for money through efficiency gains
Payment for results	• Tariff-based, with payments for results against specified student criteria • Variable, based on delivered performance • Levels set to provide real incentives (could be above costs) • Significant proportion of available funds
Projects & initiatives	• Time-limited, geared to particular development objectives • Project-based, covering all/part of costs • Expected to deliver capacity or performance improvements
Tuition fees	• Capped by current policy limits • Variable with student recruitment (and hence with attractions of offer) • Institutions can choose to top slice revenue for bursaries, etc.

Conclusions

2.42. In respect of the use of costs to support funding we conclude that:

a. Cost information is potentially needed to support all the HEFCE policy aims we have discussed. It is helpful to think of this at three levels, or cost objectives – total costs of sustainable teaching; allocation of resources to institutions; and information for good practice and good management by institutions.

b. The allocation of resources to institutions is potentially the most detailed and burdensome requirement. For this cost data should:

- permit fair and equitable allocation of funding
- be of use in informing tariffs whether for a multi-tariff model, or a single standard tariff model
- be of use in informing levels of funding for exceptional variations
- also be prepared or presented in a way that helps promote efficiency, sustainability and diversity — the Cost objective III policy features.

c. The methods should demand no more detail than is required for the current TFM and preferably less — they should provide information that suits the granularity of the funding model.

2.43. We examine the feasible approaches to collecting and using this cost information in chapters 3, 4 and 5.

3. Principles, approaches and cost drivers

3.1. This chapter defines a number of costing principles and techniques that should guide the collection of cost information to support the three cost objectives discussed in chapter 2. It makes a series of propositions about the principles and techniques to be used. It also reviews all the cost drivers for Teaching that we can identify, or that have been proposed to us, and considers which of these are significant and feasible to use to support the three cost objectives.

3.2. For all these applications, we have made some high-level assumptions that the cost methods to be used should:

a. Follow accepted TRAC principles (verifiable; material; consistent with other costing methods used to provide cost data to Government).

b. Be designed to minimise burdens on institutions – and as far as possible just use data that institutions need for their own purposes.

c. Provide an improvement over current information.

d. Cover the whole sector – all institutions should participate, but all should gain useful information for internal purposes (such as pricing, resource allocation, efficiency and planning), and be encouraged to develop good costing practice, and to understand their costs better.

3.3. We believe these high-level principles are uncontentious. To do other than (a) or (b) would add to the burdens on institutions. We believe (c) is the rationale for this study and that (d) is a matter of equity and effectiveness.

Costing principles and approaches

3.4. The first part of this chapter covers some more specific areas of choice in the approaches to be adopted. These cover:

- holistic costing
- accuracy vs burden
- marginal or full costs
- absolute, relative or proxy costs
- actual or estimated costs
- fixed/variable costs
- whole life costing
- bottom-up/top-down costing.

An holistic costing approach

3.5. It is a key guiding principle of TRAC that the framework it provides for institutional costing is holistic, which means that the methods and approaches within TRAC can be applied to all activities and purposes of

institutions. However, over the past five years there has been an undue focus on developing the costing of Research, due to the funding priorities at the time. This is likely to have had some impact on the design of institutions' costing models, and their interpretation of their activities (and the costs that should be attached to them). Fully developing the Teaching side of TRAC will help to redress any imbalance that might have arisen.

3.6. A second aspect to this is that the current cost data used to inform the TFM has been provided through a series of individual costing exercises, designed to cost only one characteristic (such as part-time, foundation degrees, WP and discipline weightings). It is difficult to ensure that all costs are properly accounted for (not ignored, double-counted, or biased) if only part of an institution's activities are being considered. The principles recommended here are therefore for a comprehensive costing approach that covers all activity. This does not mean that all activities have to be costed to the same level of detail.

Accuracy vs burden

3.7. A number of factors drive towards greater accuracy in TRAC and any other costs produced by institutions. These include the needs of external funders and stakeholders who tend to err on the side of seeking greater rather than lower levels of accountability. There is also a strong tendency by institutions to play it safe by, effectively, doing more than is strictly required to satisfy external scrutiny. This tendency has been evidenced recently in respect of institutions' responses to external scrutiny of quality assurance in higher education[2] and has been a constant feature in TRAC.

3.8. However, all this extra accountability also brings extra costs. A regulatory impact assessment of TRAC shows that the cost of implementing TRAC over the past three-to-five years has been of the order of £500,000 per annum for a large research-intensive university which has taken a middle-of-the-road approach to implementation in terms of the effort put in.[3]

3.9. The Higher Education Regulation Review Group (HERRG) reviewed this assessment. It agreed that: '…despite the burdens of implementing this new system, TRAC [had] delivered significant benefits to the HE sector'.

3.10. It is clear that extending TRAC to provide a better base of information to support the funding of Teaching will add to costs in institutions (although the fact that TRAC is already in place will greatly reduce these costs compared to what they would otherwise be). We have applied two principles to all the recommendations we make in the rest of this report:

- any extra costs should be kept to the minimum that is required , and should always be tested for reasonableness
- there must be a clear benefit to justify these extra costs.

[2] The Costs and Benefits of External Review of Quality Assurance in Higher Education. A study for the DfES and for the Quality Assurance Framework Review Group by JM Consulting. March 2005.
[3] www.jcpsg.ac.uk/download/resources/regimpactTRAC240305.doc

Detail

3.11. We concluded in chapter 2 that the granularity of the TFM is likely to be made less fine rather than more detailed. This would not preclude much more detail in measuring volumes – for example via credits, but we are here concerned with the detail of costing, not output measurement.

3.12. At first sight a future TFM which looked like model B in chapter 2 might need higher level cost information than in the present TFM. Only a single tariff would be required – arguably this could almost be achieved by taking the total costs divided by the total number of students, thus greatly reducing the data collection required.

3.13. However, this simplification in the core would have a knock-on impact on the non-core funding. Characteristics that were funded as exceptional variations would still need to be costed in their entirety (that is, all WP activities/provision) rather than just that part of the activity carried out to support the exceptional volume. There may be step-change in costs (semi-fixed costs might only partly be affected by fluctuations in volumes of activity); alternatively, some costs may just not be incurred unless exceptional provision is being provided. Information on the fixed/variable nature of costs will be useful in understanding this better (see below).

3.14. Under model B no simplification of the current range of policy characteristics is proposed, and therefore all would still need to be costed to identify exceptional variations.

3.15. Going beyond this, the costs of programme years, programme levels, and types of WP and PT student may well differ, and could be identified separately. This could arguably lead to an even fairer reflection of costs, and therefore more equitable distribution of funds informed by those costs. However, most of these characteristics would be very complex to define, cost, and identify in terms of units on which tariffs can be applied. Some institutions would be interested in identifying a cost per student of specific courses, mainly for pricing and/or internal planning purposes. Again it would be more burdensome to provide costs at this level of detail, rather than a cost per student of a discipline.

In general we propose that costing models are designed to provide the level of detail used in the current funding model, with a few exceptions. We also propose, however, that the costing models are designed to facilitate costing at a lower level (i.e. in more detail) by those institutions that wish to do so for their own purposes.

Frequency

3.16. Costs could be prepared only once (during the lifetime of a TFM), annually, or periodically (such as once every three-to-five years).

3.17. Obviously the first option – a one-off costing exercise – would be the least burdensome on the sector. We note that in the current TFM, moderation and mitigation both affect the extent that actual funding directly reflects formulaically-derived funding.

3.18. However, a number of factors militate against the use of a one-off exercise at this stage:

a. The Government's spending review is repeated every second year.

b. The sector is improving its costing skills, but is not there yet. Experience with TRAC has shown that institutions need at least a couple of iterations (supported with benchmarking and other techniques) before they produce costs that are robust, look fair and reasonable, and that they can begin to understand. Data robustness is likely to be significantly better on a second or third round of data collection.

c. Costs are changing, as a result of additional income from tuition fees (and market influences that affect recruitment potential), but also as a result of other funding changes in the sector (for example, in Research). Major changes in resource allocation models are likely to start to influence cost levels. Monitoring sustainability may affect spending. Historical, or planned costs, will become out of date very quickly.

d. It would be more useful to the sector to embed cost models, and for institutions to develop and use them as part of their normal management techniques, rather than view them as a one-off externally imposed exercise.

In general we propose that the focus will be on embedding models in institutions, and not carrying out one-off exercises. Annual or periodic provision of data will be more useful for the TFM and for institutions.

Sample size

3.19. If the purpose of collecting costs is just to calculate average tariffs for funding then a representative sample is strictly all that is needed. If the data are difficult to establish then it becomes a burden on institutions to provide them, and the sample size should be small.

3.20. However, costing studies so far show that there is significant variability in most of the data. A large sample would be required for robustness.

3.21. The arguments we have just put forward also apply here. It may be useful

for every HEI to calculate its costs, so it understands the costs of its provision better (and can see if it is an outlier and start to understand the reasons for this). This need not cover all activities. Those that are very difficult to cost robustly can be treated by preparing some standard costs (from a small sample) showing different levels of activity/cost. Other institutions could then select the appropriate level of standard cost, informed by whatever information they have available.

We propose that the costing methods will involve the whole sector, except where they are complex or otherwise burdensome. In those cases, a range of standard costs might be prepared, from a small sample. However, the costing methods used would still be made available for the rest of the sector to use if they so wished.

Marginal or full costing

3.22. Costs can be built up in an inclusive or exclusive way. The main options are:

- marginal: direct costs only – those that would not be incurred if the activity did not take place – few or no indirect costs
- full costs: including indirect costs
- cost plus: full cost plus the cost adjustments (these are TRAC costs).

3.23. It is tempting for institutional managers to cost some activities on a marginal cost basis as there may be little immediate visible increase in indirect costs as a result of this new, or different activity. CETLs or other new initiatives might be an example of this, or part-time students infilling on full-time courses. However, this approach has a history of overuse in the sector, leading to underfunding (and underpricing). The danger is that at some point the accumulation of supposedly marginal activities will impact on indirect costs.

3.24. It is possible to cost on an incremental basis where the additional costs are identified both in direct cost elements but also in indirect cost elements (an additional 0.2FTE in Finance, for example). This is possible where a very large new activity is being costed (such as a new medical school, or nursing school) but is very difficult with smaller activities (like a CETL or a new course). In both cases it is important fully to reflect the indirect costs, whether through the incremental approach or through a proxy such as indirect cost rates.

3.25. This can appear complex, when activities become the main focus of a costing model, but are themselves an indirect cost. These may be funded through a specific initiative (for example, some of the activities funded under rewarding and developing staff, CETLs and national museums); or are being costed to inform HEFCE policies and actions in areas other than the TFM (for instance the costs of working with external quality assurance[4] and the

[4] Review of External Review of QA in HE (see footnote 1 page 19).

costs of implementing TRAC[5]). In these cases the activity itself will need to be converted into a direct cost and be allocated a share of other indirect costs (reduced slightly to reflect the increased volume of direct costs). This was the method used for the two studies we just referred to. We discuss a costing model for this in chapter 5.

3.26. It is of relevance to note that although TRAC costs on a 'full economic basis', it does not recognise all the costs that need to be incurred but are not actually currently reflected in expenditure. These might include addressing excessive workloads, low salary payments, and underexpenditure on maintaining assets or backlogs. This can be addressed through the use of modified actuals, which we cover below.

Absolute, relative or proxy costs

3.27. An absolute cost is here defined as a total figure (for example, a total cost per student on a laboratory course).

3.28. Relative costs describe the relationship between two absolute cost figures, (such as the cost of a laboratory subject being twice that of a non-laboratory subject). It is not possible to determine relativities without first calculating an absolute cost. Relativities might then be useful to express the difference between items, such as courses, in a funding model.

3.29. Proxies can be used in two ways. Firstly, they can be used when attributing costs across courses. When costs are not specifically related to any one course, student numbers (perhaps weighted), or some other proxy, are used to attribute costs to courses. This is a well-established technique under TRAC.

3.30. Secondly, proxies can be used to classify different subjects, or students, into the right absolute cost category (proxies such as the type of equipment used, or staff:student ratios [SSRs], or contact hours, could determine whether costs are likely to match those of other subjects). The recent classification of sports science and media studies to price groups is an example of such use of proxies. This requires an understanding of the characteristics of each course or student to identify the resources (equipment, SSRs) that are being used.

The focus of the costing models will be on absolute costs. These might then be expressed, and used, in terms of their relativity.

Proxies will be used in the costing models to attribute costs that do not relate specifically to one course or student, between each type of course or student type. These proxies will be chosen according to TRAC principles – in a way that reflects the use, benefits or cause of the costs being allocated, and produces fair and reasonable results, but without requiring inappropriate levels of detail or bureaucracy.

[5] Established as part of the Regulatory Impact Assessment (see footnote 2 page 19).

We propose that costs are established where it is possible to do so cost-effectively – see principles above. However, proxies will be used where it is not possible to establish costs cost-effectively (course costing might be an example of this) or where it is a useful method to encourage institutions to understand their costs better.

Actual or estimated costs

3.31. Historical or future cost information could inform the funding model. Historical costs could reflect an institution's actual cost or an average standard cost. Future costs could be based on theoretical (zero-based) costs; or estimated or planned costs.

3.32. A variation would include modified historical costs – where actual costs are amended to incorporate some planned variation in spending.

Zero-based costs

3.33. The zero-based approach is conceptually the most useful for a funding model. It stands back and calculates a should-be cost. It could be used to eliminate all exceptional activities or costs beyond those required for a student learning experience. It focuses on the activities and resources that are required to produce the desired output.

3.34. This could be useful in costing a standard teaching and learning experience. It could be useful in determining the actual level of funding that HEFCE wishes to fund through its consistent or standard provision – with institutions perhaps covering any additional costs through fees or other income.

3.35. Without a zero-based approach, costs are either historical – just reflecting actual spending, which may not be at an appropriate level – or planned. Planned spending is likely still to assume past levels of costs for much of the work. These are considered below.

3.36. A zero-based costing approach has been explored in Scotland.[6] Direct costs are established through bottom-up techniques (number of contact hours, amount of consumables, or technician time). Only costs that are really necessary to provide high quality education should be included. Inefficiencies should be eliminated and the use of best (or even just good) pedagogical practice can be encouraged – while excluding 'non-essential' higher-cost practices and customs.

3.37. However, there is insufficient understanding in the sector of what represents good or efficient practice in pedagogy – let alone agreement on it. Whilst

[6] A study was carried out by JM Consulting for the Scottish Higher Education Funding Council (SHEFC) in 2000 with the aim of identifying the efficient costs of teaching, for use in informing their TFM. The data could not be established robustly – with no definition of 'efficient teaching', an unclear relationship between quality and efficiency, little reliable data on the actual costs of teaching and learning activity, difficulties with establishing and costing future teaching practice, and problems with obtaining representative information because of the wide variation of practice and disciplines. In the end the consultants were unable to identify sufficiently robust evidence on which to base clear recommendations for a revised structure and level of prices. See www.shefc.ac.uk/library/shefc/circular/2001 HE/41/01 18 October 2001 Review of Teaching Funding.

some academics may say that small group teaching is better, others would look at the role of large lectures (perhaps multi-disciplinary, contextual), or wish to consider the interaction of different groups of students from different backgrounds.

3.38. It would also be difficult to define practices (and costs) that might lead to higher quality – quality is not currently being defined or reported in a way that would facilitate this.

3.39. There are thus difficulties in defining 'good practice' in pedagogy, and therefore 'required' or necessary direct cost levels. Such direct costs (contact time, consumables) moreover only cover some 15-30 per cent of the total costs of teaching a student.

3.40. Other resources are even more difficult to classify as reflecting good or efficient practice. Administration and support, estates, and central services costs in institutions vary widely. There is little understanding of the reasons for this, and what levels of indirect costs are actually appropriate or necessary at an institutional level, let alone at the level of a department or course.

3.41. This lack of understanding and consensus makes a zero-based approach difficult to implement successfully (as identified in the study in Scotland).

Historical costs

3.42. Historical cost approaches measure what is actually happening.

3.43. Funding informed by actual historical costs (whether actual institutional costs, or standard costs based on averages) will be far easier to calculate, but will inadvertently incorporate cost factors that are not desirable in a funding model. For example:

a. Any built-in inefficiency: This will arise as a result of factors including lower student numbers (with 'fixed' staff costs), outdated Teaching and learning practices, inefficient administration or support structures, inappropriate use of academic staff, and high-cost or poorly-utilised buildings. We consider efficiency as a specific policy feature below.

b. Costs may not be sufficient to maintain quality provision in the longer term.

c. Previous funding levels. As already noted, the level and terms of funding available is a major factor in determining 'actual' (that is, observed) institutional costs.

Previous funding levels

3.44. Historically, approaches to resource allocation within institutions have tended to allocate funding to academic departments, minus a sum of some sort for central services. The funding has been allocated in a way that reflects either: (a) the institution's perception of each department's need for resources; or (b) the way that the funds have been allocated by sponsors – e.g. HEFCE's funding model, plus non-home/EU fees earned. The

expectation has generally been that the department will then break even. Under the second method, costs have therefore been encouraged to reflect HEFCE's own price bands.

3.45. This may change with the increasing use of TRAC information internally. TRAC is leading many institutions to consider allocating all costs – including central services – to departments, and all funding. This will result in sets of departmental surpluses or deficits, which will then be deemed acceptable or unacceptable by the institution. There are three reasons for this:

a. There is a much better understanding of the difference between cost and prices obtainable from different sponsors.

b. TRAC now provides institutions with information on the actual levels of central services and estates costs required to support each department or activity. Top-slicing is unlikely to continue in many institutions, being replaced by activity-based cost allocations.

c. Cost-based research funding from public sponsors will not directly reflect the actual estates or indirect costs of each department. (The funding is mainly based on institutional average costs, and includes cost adjustments which are certainly not in the institution's financial statements, and are unlikely to be included in the institution's management information.) There will be a mismatch between research funding and costs at a department level, even though the funding is based on actual institutional costs (adjusted).

3.46. As a result, institutions are more likely formally to plan cross-subsidisation between departments, and not require individual departmental spending to be so dictated by external funding models.

3.47. However, the current funding model does include a considerable amount of detail, and institutions will no doubt continue to try to replicate this in their funding model. A more strategic approach would be facilitated if they were no longer encouraged to assume that funding is a proxy for costs.

3.48. The current funding model removes the standard nature of the current fees (a standard flat fee per full-time [FT] student) by building the fees into the price band (discipline weightings are used for both grant income plus fee income). If the new top-up fees were also incorporated into a discipline-weighted funding formula, (informed by historical costs) then this would encourage institutions to perpetuate historical cost relativities between disciplines.

3.49. As we commented in chapter 2, it may be more useful for the new top-up funding to be allocated on a standard tariff basis to the institution as a whole. This might help to encourage institutions to focus on what they actually need to deliver. Funding model B, discussed in chapter 2, using a single standard tariff throughout the institution, does this.

Planned costs

3.50. Forecast, or future, costs could be used instead of historical costs. This is a technique used in TRAC fEC for 'directly incurred' costs (these are the variable costs that are only incurred if the project takes place). All other costs, such as academic salaries, estates costs and indirect costs, are

based on current or historical cost levels (indexed). (Academic staff time is obviously an estimate, as the projects are not generally on-going. However, even here, time that has been spent on similar projects in the past provide principal investigators and funders with a view as to what levels might be reasonable to spend in the future.)

3.51. Planned costs should not encourage wish lists. There should be a clear value to be gained from a different (higher or lower) level of spending.

3.52. Planned costs to achieve/maintain sustainable provision could be based on a number of assumptions (these assume the volume of activity remains constant) including in particular:

a. That current underspending is addressed (underspending on estates would be evidenced, for example by remaining or increasing backlogs, or through gaps in the future funding of the planned estates strategy; underspending on academic salaries could be evidenced through low comparative salaries, or high working hours; student expectations of services may indicate a need for higher spending, particularly with higher fees).

b. That the value-added or quality is increased (such as new activities to improve retention being planned; investments are made in more product development or partnership arrangements).

3.53. They could be predicated on various bases:

- addressing a known, quantified problem
- carrying out an initiative that is scoped to fit within a stated amount of funding
- the costs that are required to produce a new output (or carry out a new activity), or an enhanced level of existing activity.

3.54. The main use of planned costs would be to inform the bidding for funds, on specific initiatives that have not previously been undertaken.

3.55. However, planned costs can also be used to interpret or develop historical cost information, to fill in known gaps in spending and to point out how costs will change with strategic initiatives. They may therefore be very useful both in presenting a complete picture of the total costs of Teaching, and in funding exceptional variations within model B which could be justified within a strategic mission. However, there should not be any double-costing: TRAC already includes a cost of capital employed which adds an estimate for the costs of restructuring, innovation and development onto actual historical costs.

We propose that the costs developed in the costing models are initially based on historical actual costs, modified or interpreted with planned costs where appropriate.

The drawbacks of historical actual costs should be countered by techniques incorporated in both the costing and funding models. These would include benchmarking, adding information about planned costs, funding only part of the costs, and (possibly) funding some of the provision on a single standard tariff basis – such as in model B.

Fixed/variable costs

3.56. Variable costs tend to vary with changes in the level of activity. Examples here are consumables, fieldwork or placement costs on a course. They vary with changes in the number of students, or whether a course is provided or not.

3.57. Fixed costs tend to be unaffected by fluctuations in the levels of activity, within certain limits of volumes and time. They may be affected by the type of activity (such as supporting Research or Teaching). Central services departments such as registry, finance, personnel; central academic expenditure (examinations, libraries etc); staff/student support services; and estates are commonly considered to be fixed costs.

3.58. Fixed costs cannot easily be linked directly to one particular course or student (although some can be linked to an activity as a whole, e.g. Teaching or Research). Proxies are therefore used to allocate them to students or courses. These costs are called Estates costs and Indirect costs under TRAC fEC. Estates costs are firstly attributed to Research, Teaching and Other, and to departments, using data on how the space is used. Research estates costs are then 'directly allocated' to individual research projects, commonly through use of a proxy such as staff (and Postgraduate Research, PGR) FTEs. Indirect costs are firstly attributed to Research, Teaching and Other, and to academic departments, using cost drivers (staff:student numbers, academic time allocation, head of department estimates etc). Research indirect costs are then attributed to individual research projects using a proxy of staff (and PGR) FTEs.

3.59. Most costs in academic departments are fixed in the short term. Academic staff costs and academic department expenditure (support staff, equipment, office supplies etc) are fixed for one (or so) years, although after two or three years they can be varied. For ease of reference in this report, we call these costs semi-fixed. They do not vary each year by the number of students on a course, and they are not dependent on whether a course is provided or not. However, over time, they can be changed to reflect overall changes in the levels of activity.

3.60. We have already discussed and rejected marginal costing (where the identified costs would only reflect the variable costs that would have been avoided if the student did not attend or the course did not take place).

3.61. We would also note that because of the fixed and semi-fixed nature of many costs in HEIs, it is important periodically to revisit costs to encourage and allow change over time to be reflected in the funding model (as appropriate).

The costing models should distinguish between variable, semi-fixed and fixed cost items, although costs presented to HEFCE would include all of these. This does not mean that funding should be made on a variable cost basis.

Whole-life costing

3.62. Whole-life costing is alternatively known as life cycle costing. It is often used as a technique for ensuring those purchasing an asset consider the full cost of its purchase and ownership.

3.63. The visible costs of any purchase of an asset, or the development of an activity, represent only a small proportion of the total cost of ownership of the asset or management of that activity. This has been a problem in HEIs (although this has improved significantly over recent years), with equipment or buildings often being costed and funded on a marginal cost basis (the costs of purchase only). Associated costs (such as modifying a building to take the equipment, or of decanting staff and refurbishing other accommodation because of the knock-on effect of a building development) have often been ignored. Too frequently the costs of subsequent maintenance and management were not planned, with the result that the asset could not then be used properly throughout its useful life.

3.64. Whole life costing is also important when the funding available for an initiative was only to cover recurrent operating costs, and not the original development activity, or not the on-going management costs. All activities have start-up costs, and it is important for institutions to understand the level of these, and (if no initial funding is available) how many years' payback is involved. If the initiative is short-lived, and there are large start-up costs, then the impact of these will be important to understand when funding on a recurrent basis.

3.65. However, the costing models should not encourage any double-counting of costs. For example, if a set-up cost is accounted for under one funding stream (such as set-up funding for foundation degrees), then it should not be incorporated into the recurrent costs subsequently reported and funded for foundation degrees.

3.66. Caution is necessary - incorporating costs over different time periods is complex. In addition, development activity (including investigation of new ideas or programmes that may not eventuate) is an important everyday part of HEI life and is built into the TFM. The development of a future activity is really an integral part of the costs of carrying out current activities across the HEI as a whole. TRAC acknowledges that current levels of development spending are insufficient – the TRAC cost of capital employed adds the cost of future innovation and redevelopment to historical actual costs to provide a full economic cost that reflects a sustainable level of activity.

We propose that the costs of any new venture or initiative should be prepared on a whole life cycle cost basis, regardless of the fact that the initial funding may only cover the purchase/development costs and not the recurrent operating costs.

In general, development costs of future activities are incorporated as part of the costs of current activities. However, if separate funding is being made available (perhaps to encourage participation) the costs would not be included in recurrent costs.

Where development costs are included in recurrent costs, it would be useful for them to be separately identified to give an indication of the level of this activity. It may be too difficult to do this for all development/innovation activity, but it should be possible to identify separately at least the costs of exceptional types or levels of innovation and development activity.

Bottom-up/top-down costing

3.67. Bottom-up costing involves measuring all the resources used for a particular activity, such as a student or a course, applying unit costs to each resource, and aggregating these to arrive at a cost for that student or course. The costs of a course could be built up in a bottom-up way by establishing the number of contact hours, and level of consumables and equipment, required for a cohort of students on a course. This technique is commonly used when costs are being prepared for very small units within an institution – like a module or programme.[7] This can be very time-consuming. Bottom-up costing is only really suitable when dealing with variable costs (costs that vary by module or student).

3.68. This technique can also be used to identify the costs of individual activities, establishing the costs of widening participation, for example.

3.69. Top-down costing involves identifying the total resource cost for a given number of courses or students and calculating a cost per course or student by dividing the total resource cost with a volume measure such as the number of courses/students (perhaps weighted). This technique is commonly used either where volumes are such that bottom-up costing is too burdensome, or where the information on resource use and costs by a student or course is just not available. This is the case with much of an HEI's costs – as previously discussed – the fixed costs, and many of the semi-fixed costs such as support staff within a department, or general office costs, do not link to any one student or course. This relates to the

[7] Review of the Unit of Resource for Initial Teacher Training – Study of Provider Costs. A review for the DfES by JM Consulting, April 2004. www.dfes.gov.uk/research/data/uploadfiles/RW3.doc
The costs of alternative modes of delivery. Report for HEFCE by JM Consulting. www.hefce.ac.uk/pubs/rdreports/2003/rd14_03
Provision of a standard pricing system for NHS non-medical education and training contracts. A report for the MPET Benchmarking and Attrition Review Group. Commissioned by the Department of Health and Universities UK. JM Consulting, January 2003. www.dh.gov.uk/assetRoot/04/03/51/43/04035143.pdf

significant majority of the costs of Teaching.

3.70. A top-down model, used exclusively, would draw upon summary costs currently available in institutions – for example, costs of a department or school. Central services and faculty costs as appropriate would be attributed to each department using appropriate proxies. An average cost of a student in each department could fairly easily be calculated.

3.71. These department costs could then be attributed between subjects, or programmes/modules taught by that department, to provide costs of a subject or course. To make this more meaningful than an average cost can be, some type of bottom-up cost approach, or analysis, would be necessary.

3.72. Many of the course cost models used in institutions are based on a detailed bottom-up approach, with considerable emphasis on contact time (which is measurable by programme in those types of institutions). If institutions operate modular or credit-based systems, data can be collected at this lower level. However, these models too often then use contact time to drive other costs in academic departments – the rest of academic staff time (spent on activities such as pastoral support, assessment, preparation, scholarship, and management/administration), or secretarial time, etc. This is inappropriate, and particularly so with non-standard modes of delivery such as e-learning and distance learning.

3.73. More sophisticated models would consider the resource requirements by course for each type of teaching activity undertaken by academic and other staff. This would be more burdensome to do. It is important that the costing burden is not made too great – no matter how sophisticated, such a model would not deal well with fixed costs, such as central services. These probably comprise 50-70 per cent of the total cost of Teaching.

3.74. It would be possible, however, to use proxies, or ‘resource relativities’ to provide more useful information at course level, without undue burden. For example, each type of course or module could be graded as resource heavy or light for each type of input – contact time, pastoral support, administration, preparation, and assessment. Each grade would be allocated a weighting that reflected its relative effort. These weightings could be used to attribute academic staff costs between courses or cohorts of students.

Overall, a bottom-up study is the only way to provide robust data at the level of an individual module or course, as opposed to the average costs of all modules or courses in a department. It should be possible to develop a more sophisticated, but not inappropriately burdensome method of establishing these costs. But it still requires a top-down cost model to allocate the majority of the costs.

Where a higher average cost will suffice, such as the average cost of a student in a particular cost centre or department, then a top-down approach could be used. This would require significantly less work than a bottom-up approach. The proxies used to attribute these costs downwards would incorporate weightings, where possible, to ensure that the relative use of each resource by each type of department (or student) was taken into account.

3.75. The approaches that could be used are illustrated in Diagram B.

Diagram B: Possible approaches to bottom-up and top-down costing

<table>
<tr><td>Cost objective:
cost per student per
Resource or cost</td><td>Specific module</td><td>Specific part of a course (e.g. Y1)</td><td>Specific course</td><td>Dept or cost centre</td></tr>
<tr><td>Direct costs*:
• contact hours
• cost per hour
• direct non-staff costs (e.g. placement costs; laboratory consumables)</td><td colspan="3">Bottom-up approach</td><td rowspan="2"></td></tr>
<tr><td>Indirect costs:
• pastoral/administration/assessment/ preparation costs**
• support staff
• all other non-staff costs in academic depts
• faculty costs
• central services costs
• estates
• library
• finance, personnel, student support etc</td><td colspan="3">Top-down approach</td></tr>
<tr><td>total costs</td><td></td><td></td><td></td><td></td></tr>
</table>

*Direct costs are here defined as the direct costs of a course, not of teaching activity as a whole.
** It is sometimes possible for some of these activities to be identified through a bottom-up approach e.g. assessment time.

Cost drivers for the TFM and good management practice

3.76. In chapter 2 we identified the need for cost information to support the allocation of funding to institutions. It should:

- permit fair and equitable allocation of funding
- be of use in informing tariffs whether for a multi-tariff model, or a single standard tariff model
- be of use in informing levels of funding for exceptional variations
- inform the funding of strategic initiatives

and

- also be prepared or presented in a way that helps promote efficiency, sustainability and diversity – the objective III policy features.

3.77. We firstly consider factors that affect the costs, or cost drivers. A full list of potential cost drivers for Teaching is included in Table 3 in Appendix B. We have considered whether it is appropriate for each of these to be recognised in a formulaic funding model; or if their identification would otherwise support good management practice.

Criteria for selection of cost drivers

3.78. It would be appropriate for cost drivers to be recognised if they lead to significant differences in cost levels (at an institutional level) between institutions – thus informing a fair and equitable distribution of funds – or if they provide a particular focus or information that relates strongly to one of the HEFCE policy features. In either case, the principles established earlier should be considered – such as materiality, usefulness and minimising bureaucracy. We have used the combination of these criteria to determine whether the costs arising from any one cost driver should be identified as necessary for a cost-based TFM.

3.79. Institutional good management practice might, however, benefit from a different set of cost information. We would consider this type of information to be optional, rather than mandatory, and the methods that could be used would be less formally designed.

3.80. All of the factors shown in Table 3 impact on costs to some degree. However, not all of these meet the criteria given in the paragraph above:

- some are not significant in volume terms (therefore have a low impact on institutional costs)
- others can just as well inform a funding model through proxies rather than costs
- some lead to cost levels that are not strictly necessary – other institutions do not incur this level of costs, but achieve equivalent results (in HEFCE policy terms)
- some are too difficult to define, or too complex to cost
- some are not mutually exclusive.

Selection of cost drivers

3.81. It is not necessary to reflect every one of these potential cost drivers in a costing model. Also, when they are reflected in a costing model, it is important that they are not double-counted – e.g. that the higher costs of a PT foundation degree student are covered under either or both headings, but the costs are not included twice. If they are, the TFM may cover them twice. This can be avoided by either defining each factor in a way that specifically excludes costs that are being recorded under another, or by deliberately removing any double counting.

3.82. The cost factors we have reviewed, and the proposed costing treatment of each, are summarised in Table 1.

3.83. We propose that the factors with a tick in the left-hand column of Table 1 are costed as part of a consistent national costing model. They could then be used to inform both formulaic funding and strategic initiative funding. We consider the methods for doing this in chapter 5.

3.84. We propose that supplementary cost models are made available for the factors with a tick in the middle column, as this would assist good management practice. However, these would be for institutions to use at their discretion.

3.85. We propose that the factors in the right-hand column are not costed separately. That means that they will not act as drivers of costs to inform the TFM. However, any costs incurred by institutions as a result of these factors will not be excluded. They will be included in the total teaching cost that informs the TFM.

3.86. The cost drivers which will be considered are therefore as follows:

Diagram C: Cost drivers under consideration

Discipline
High-cost base
- high costs outside institutional control (e.g. old and historic buildings)
- size (i.e. small institutions)
- breadth of provision (strategically important and vulnerable subjects)

Volume of Teaching
- long periods (long course)
- short periods (part-time)

Diversity of student population
- widening participation as defined by institution

Flexible modes of delivery (pedagogy)
- high-cost exceptional provision
- non-standard provision
- other

Projects/initiatives
Specific course
Specific module
Non-completion

3.87. We note that student numbers is also a cost driver, but is inherent in all of the above. Costs would generally be expressed in terms of costs per student, in line with the TFM which uses the same volume measure – student numbers – to allocate funds.

3.88. The cost drivers which we recommend should not be costed separately for the purposes of Cost objectives II or III are as follows:

- specialist institutions
- minority/low demand subjects
- funding available
- type of students (other than WP), accessing additional support
- flexible models of delivery (other than specific types defined by HEFCE)
- franchised provision and sub-contracting
- partnership arrangements
- level of study
- year of programme
- complexity
- value for money.

3.89. We explain the arguments for these decisions in Appendix B.

Table 1: Proposed costing treatment of the main cost drivers

Cost driver	**Proposed costing treatment**				
	costs are identified for the TFM	reason	**costs are identified for good mgt**	**costs are not identified**	reason
Discipline	✓	**leads to significant difference in cost levels – fair and equitable**			
High cost base: **- cost burden outside institutional control** **- size** **-** specialist institution	✓ ✓	**leads to significant differences in cost levels – fair and equitable**		✓	extra costs currently arising for institutions with this classification are now included under either: flexible delivery, or high-cost institution
Breadth of provision: - minority subjects - **strategically important subjects** - other subjects with low demand	✓	**not significant at an institutional level, but is a policy feature**		✓ ✓	not of policy interest, and not significant in size, so can be subsumed into total institutional funding as above
Funding available (e.g. from high market prices)				✓	covered in the income assumptions used in the TFM, not the cost weightings – but informed by benchmarking

Volume of Teaching: **- long periods** **- short periods**	✓ ✓	**leads to significant differences in cost levels - fair and equitable**			
Diversity of student population: - WP as defined by HEFCE **- WP as defined by institution** - other students accessing additional support	✓	**a HEFCE (and OFFA) policy feature**		✓ ✓	a proxy for the WP student population that requires additional resources; and one that would be very difficult to cost in institutions as it is not recognised in this way excluded from the costs of WP students where possible
Flexible delivery: **- high-cost disciplines or pedagogy** **- alternative modes of delivery defined by HEFCE e.g. WPL, FD, evening delivery, off-campus** - other	✓ ✓	**a HEFCE policy feature** **a HEFCE policy feature**		✓	small in number, difficult to define, multiple methods of delivery (however, could be costed using methods discussed under course costing)

- franchised - partnership - **other (academic or institution choice)**			✓	✓ ✓	further education colleges' costs are not a cost to HE; the HEIs' costs will therefore form part of the costs of disciplines these costs will be part of the costs of disciplines
projects/ initiatives	✓				
Level: **-** PGT - UG - sub-degree **specific course within any of these** **specific module within a programme**			✓ ✓	✓ ✓ ✓	no systematic evidence of costs being different by level – PG courses covered under long courses where relevant
Year of programme				✓	modules can be taken by different year groups; no evidence that year itself drives costs
Complexity				✓	caused by other factors listed here, and therefore built into their costs
Value for money				✓	a HEFCE policy feature, but not costed directly
Non-completion			✓		

4. Determining the costs of sustainable Teaching

Introduction

4.1. This chapter and the next describe a set of feasible costing models that could deliver the three types of information described in chapter 2.

4.2. The first cost objective (total costs of sustainable Teaching) is covered in this chapter.

Total teaching costs and sustainability

4.3. Costs at a sector level need to be established through the aggregation of costs at an institution level. This information would need to be produced in a way that could help inform public funding decisions – therefore a distinction between Research, Teaching and Other activities would be required. These terms as used in the rest of this report are those defined under TRAC.[8]

4.4. Monitoring of individual institutional sustainability by Government might include a number of metrics that could include (in terms of costs)[9].

- operating surplus/deficit incorporating the TRAC cost adjustments. This might be at the level of Research and Teaching
- total expenditure on equipment (capital and recurrent)
- total investment in buildings
- value of backlog maintenance.

4.5. Trends in these are likely to be more important than the absolute figures. They also need to be viewed alongside other metrics such as institutions' financial headroom to cope with financial difficulties, research productivity, and quality.

4.6. Therefore, costs at an institution level that inform this objective might include:

a. costs leading to surplus/deficit on activities
b. equipment
c. buildings and backlog maintenance.

4.7. We consider each in turn, but focus particularly on the first.

[8] Refer www.jcpsg.ac.uk/guidance, in particular Annex 6.
[9] A group under the chair of Roger McClure has been identifying 'trigger metrics' which cover the areas listed above, as well as non-cost information.

a. Costs of activities

4.8. This can be defined at various levels:

Diagram D: Levels of activities costing

Total costs of all activities (plus the TRAC cost adjustments) Total costs of Teaching (and Research, and Other) Total costs of HEFCE-fundable Teaching **Total costs of all activities** **Total costs of Teaching, Research and Other**

4.9. The metrics under review in this area are those based on historical costs, and we have therefore not considered an alternative to this.

4.10. The historical total cost of all activities, and of Teaching, has been reported annually through TRAC to HEFCE at an institutional level (with Teaching split between PF and NPF activity) for several years: income will be reported to HEFCE from January 2006 (2004-05 data). The methods used to provide these are well established and documented in the TRAC Guidance. All institutions provide these cost figures to their respective Funding Councils.

4.11. The robustness of this data has recently been increased, with the additional quality assurance processes introduced to TRAC in 2005. The 2004-05 data is likely to be of significantly better quality as a result. As the TRAC costing system is now well embedded, there is unlikely to be benefit in deriving the costs of Teaching (as distinct from Research and Other activities) other than through this approach.

4.12. About 40 institutions with low research activity are currently allowed to use less robust procedures; although not all have taken up this dispensation. These institutions use simpler methods when they split academic costs (and other costs) between Teaching, Research, and Other activities. However, institutions eligible for dispensation can only have very small amounts of publicly funded research (PFR) by definition.[10] Therefore, these levels of PFR are unlikely to influence a view of the sustainability of their institution. In the interests of keeping bureaucracy as low as possible, we therefore suggest that an institution's entitlement to dispensation does not need to be removed to ensure their cost information is fit for the purpose outlined here. However, the definition of dispensation should be revised to ensure that it also covers NPFR and Other (consultancy)[11] activities.

4.13. Not all institutions eligible for this dispensation are taking up the entitlement anyway. Some might, however, be affected by a redefined eligibility threshold.

[10] PF Research (PFR) in this context includes Funding Council Research grants, Research Council and Other Government Department grants. These plus EU and PGR student funding make up PFR in TRAC. NPF research work is that sponsored by charities, overseas governments and industry/commercial organisations. Institutions eligible for dispensation have less than £500,000, on average across the past five years, of research funding from PFR activity. Dispensation means that they do not have to use fully robust methods e.g. on time allocation. See TRAC Guidance Part II, Chapter C.6.

[11] Residences, catering, conferences, trading companies, interest, etc should not be included in the definition for this purpose, as the robustness of their reporting is not affected by the dispensation.

4.14. It would take institutions three years to bring their TRAC systems to an appropriate level of robustness if they are no longer eligible for dispensation, as changes of this magnitude should arguably allow a full TRAC cycle (of three years) for implementation.

4.15. In summary therefore:

The total costs of an institution, and the total costs of Teaching, Research and Other, will be available from the annual TRAC return, by institution, from January 2006.

We propose that the dispensation should remain, but that the definition is made inclusive of (academic) activities of NPFR and Other. This means that some institutions will have a significant amount of work to do to meet the minimum TRAC requirements, and we propose that they are given three years to do this.

Total costs of HEFCE-fundable Teaching

4.16. This information would be useful in informing government policy on funding levels. Zero-based costs would be technically the most useful, but would be very difficult to determine, as discussed in chapter 3.

4.17. Historical costs could be fairly easily determined – although this information is not currently reported under TRAC, it could be derived from the TRAC processes. However, this is historical cost information, and as such has limited value in informing future funding requirements, particularly when non-PF funding levels are changing so rapidly (with tuition fees). There is no evidence that historical costs are at the right level.

4.18. Historical cost information includes subsidies from Research (from, for example, the use of graduate assistants or research equipment) which are difficult to identify or quantify.

4.19. We note that TRAC information showed a breakeven (within a +/- 10 per cent margin) on PF Teaching in the early days of (informal) benchmarking. This information was not based on robust methods, and the January 2006 report (even prior to the adjustments we have proposed here) may show a different surplus/deficit position. Institutions are currently planning to spend their additional income from top-up fees (£1,800 per student entering HE, from 2006) in a number of ways – bursaries, outreach, and improving facilities. Some of this spending may be on buildings (if so, it will show in the cost figures many years after the income has been shown, and surpluses may arise).

4.20. To offset these problems, we offer two modifications to the use of historical cost information:

a. Incorporating planned costs into the analysis. Institutions' financial strategies could be examined to identify any areas of significant shortfalls in current cost levels (or indeed, they could be asked that

question specifically). As part of this, evidence on building backlogs, or underspending on maintenance, or academics' excess hours, or a further education college's (FEC's) costs (in sub-contracted provision) could be built up. All of this would need to be accompanied by the benefits that would be felt if spending, and therefore funding, could be increased (such as improved quality or higher levels of innovation or diversity).

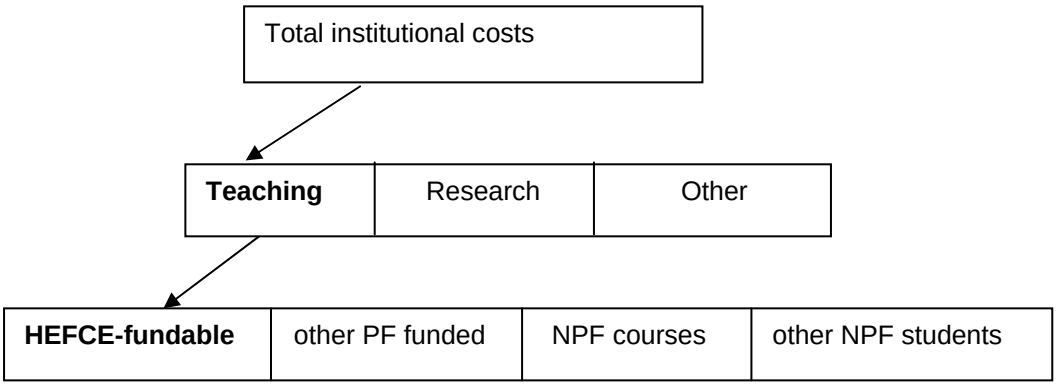
b. Examining historical costs critically in a 'zero-base informed' way. Costs could be benchmarked across the sector, and differences between different levels of spending examined in a way that encouraged debate about different ways of doing things, and the benefits that might accrue. This might require higher levels of investment, or less. This is likely to lead to more innovative ideas than in (a) above, and might be an easier process to manage. Arguably it is also focussing more on the future, and institutions' real needs, rather than dwelling on past underspending and current backlogs.

4.21. Irrespective of which of these two interpretative approaches was adopted, the costs forming the basis of the analysis – historical costs - would need to be robustly produced.

Building up the historical costs

4.22. The costs of HEFCE-fundable Teaching would be derived in the way shown in Figure 2 in chapter 2:

Diagram E: Summary of Figure 2



4.23. Currently, TRAC methods cost Teaching, Research and Other separately, and PF Teaching and NPF Teaching separately. This includes all costs incurred by HEIs and recorded in the financial statements (plus the TRAC cost adjustments). It does not include the costs of partner institutions such as NHS Trusts, further education colleges, or Oxbridge colleges which may incur costs in delivering Teaching on behalf of the HEI. TRAC does acknowledge these costs by including a proxy for them which is the cost of fees or services provided by the HEI to the partner in respect of the Teaching being provided. If these elements of 'extra-HEI' costs are significant, it may be necessary to consider whether this proxy is appropriate.

4.24. PF Teaching is defined as credit-award-bearing courses, funded by PF sponsors such as HEFCE, TTA, and the Department of Health . The costs of students on those courses who are not eligible for funding by those sponsors are identified and transferred to NPF Teaching. However, institutions use a variety of methods to do this and robustness is likely to vary. Therefore, the cost of teaching HEFCE-fundable students needs to be identified separately from other PF Teaching activity; and the robustness of the methods used to identify costs of different students (PF versus NPF) may need to be addressed.

4.25. The following types of changes to the TRAC Guidance would be needed to assist with this.

Possible changes to TRAC Guidance

Overseas and commercial short courses generally have different cost structures to that of on-campus award-bearing and credit-bearing courses. Academics should be asked to estimate their time separately for overseas courses and commercial courses or short courses not fundable by HEFCE. Where a department's short courses consist of a mixture of those fundable by HEFCE and those not, then time on these courses should be recorded separately again, and the costs apportioned between HEFCE-fundable and those not, using student numbers (or a better proxy).

If an institution is currently asking academics to attribute their time between overseas students and home/EU students, this instruction should be revised. Where overseas students are on courses also attended by home/EU students it would be difficult for an academic to split the time they spent on one course in this way. It is more robust for this attribution to be done subsequently, using student numbers. If considered material, overseas students could be weighted slightly to reflect any greater support or time provided to them.

Some institutions do not count student numbers on non-HEFCE fundable short courses in the same way as PF courses. Continuing Education, or Continuing Professional Development activity are examples of this. HESA does not, we understand, require their reporting. However, student numbers are a key cost driver throughout TRAC models. It is entirely possible that Teaching (and NPF Teaching) has not had a full share of indirect and estates costs attributed to it if students on these courses have not been fully counted.

PF Teaching courses as currently defined should be attributed between HEFCE-fundable and other sponsors. This should be done by department.[12] Where there is a mixture of different PF sponsors in any one department then the head of each department should be asked to inform the allocation between HEFCE-fundable and other. This could be done a number of different ways, for example:

a. If the institution or department is also costing courses (see cost model 3 in chapter 5) this information could be aggregated and used to provide the attribution.
b. Staff could attribute their time between HEFCE-fundable courses and other courses in the annual TRAC time allocation process – and the head of department would attribute other costs in their department.
c. The head of department could consider each (significant) type of cost in their department and assign a weighting to each of the following; HEFCE-fundable students or courses, and other PF. These proxies would be applied to student numbers and used to attribute the total costs of PF Teaching in that department.

[12] The term 'cost centre' is used in HESA and each is mapped onto a HEFCE 'price group'. The term department is not tightly defined in TRAC, it means management unit (institution defined). It would be easier, and more useful, for institutions to implement these requirements using the TRAC term 'department'.

4.26. Institutions could use other methods, if these were at least as robust.

4.27. Sometimes the FTEs of students on courses funded by other PF sponsors are recorded in HESA as HEFCE-fundable (because the recovery is less than that which HEFCE would have provided). Where material, part of the cost of these students should be recorded as HEFCE-fundable.

4.28. Some access courses are not regarded as NPF, but do not receive per student funding from HEFCE or another PF sponsor. These courses are those that would be costed into an institution's WP strategy, for HEFCE or the Office for Fair Access (OFFA). The costs of these courses should be identified as HEFCE-fundable.

4.29. A high-level review of central service costs, estates costs and faculty/school costs should be carried out to determine whether they should be weighted for NPF, PF-HEFCE-fundable and PF-other sponsors.

4.30. A short discussion with a small number of institutions should be undertaken as part of the detailed design of the changes or new methods to ensure that they are comprehensive and produce fit-for-purpose information, but are also practical and not inappropriately bureaucratic.

4.31. With these changes to the methods, and slight development of the methods, a robust total cost of teaching students who are eligible for HEFCE funding (home/EU, on credit-/award-bearing courses) could be identified. This information should be provided by all institutions, rather than a sample, as:

- it can fairly readily be generated from existing TRAC processes
- it provides the framework from which other costs can be provided that would inform the HEFCE TFM and support good management practice.

4.32. It could also be provided in other countries if it was of use to those Funding Councils, and the definition of what is Funding Council-fundable was not too dissimilar.

4.33. In summary therefore we propose that:

Historical costs of HEFCE-fundable activity provide the basis to inform total costs of sustainable teaching. However this information should be accompanied by a review of 'should-be' costs, using either planned costs, from institutions' financial strategies and other evidence, or a 'zero-based review' of actual costs using such techniques as benchmarking and critical analysis.

The TRAC Guidance should be changed slightly to improve the robustness of the PF/NPF allocation. TRAC should also be developed so that the cost of HEFCE-fundable students is separately identified. This could be done solely in English institutions, if other Funding Councils did not wish to use this information, or if the different definitions of what is funded make it difficult to change TRAC in a consistent way across the UK. A short study in a small number of institutions should be undertaken to inform the detailed design of the new or altered methods.

b. Costs of equipment

4.34. The total cost of recurrent equipment is difficult to obtain, as a significant amount of spending is devolved (and academic departments will record equipment against different expenditure headings), and there are complex funding streams that influence the way it is recorded. For example, equipment funded by Research Councils is (often) reported within research grants and contracts, rather than an equipment expenditure heading. There are issues around definitions, for example with communications and information technology, and when equipment is part of the structure of a building. Assembly or construction by a department (rather than purchase) may not be recorded as purchase. Maintenance of a piece of kit can sometimes lead to its effective replacement, but without a purchase.

4.35. Notwithstanding this, trends in equipment spending by an institution provide useful management information. Many of the definitional issues raised in the earlier paragraph could be overcome by focussing on trends in spending between years, rather than comparative spending between institutions. However, as this information is produced, it might lead to league tables, which normally compare institutions with each other, as much as making comparisons over time. It would be preferable, therefore to get the definitions as consistent as possible across institutions.

4.36. TRAC has required all institutions to identify the total costs of their equipment (excluding that covered under research grants and contracts) and transfer this out of indirect costs into estates. However, this is being done at a very high level and is not likely to be very robust.

4.37. Any definition of the metric for equipment should preferably be done in conjunction with this TRAC requirement and it could then be built in as a part of TRAC. Capital spending, and spending through research grants and contracts, would need to be identified in addition.

The use of a metric on equipment should, if possible, be linked to TRAC methods so that at least recurrent spending is identified consistently.

c. Costs of buildings and maintenance

4.38. The metrics covering capital spending on buildings and maintenance are not considered in detail here. We note that capital spending on buildings is currently available and is reported.

4.39. We have not examined the current information to understand robustness, although we are aware of some issues. For example, differences in capitalisation limits lead to some lack of comparability in reported buildings costs, but a simple weighting could be applied to figures from institutions with very high capitalisation thresholds to alleviate this. Maintenance spending often incorporates building work – if considered material this could be identified through a proxy such as the ‘increase in functionality’ identified in long-term maintenance as part of the TRAC infrastructure adjustment.

5. Costs to support the TFM and good management practice

5.1. This chapter discusses the costing models that would produce cost information to inform HEFCE's Teaching Funding Model, and/or to provide information internally to institutions to support good management practice. Costing models are considered for each cost driver or factor that was defined in chapter 3, as shown below:

Table 2: The required cost models

Consistent national framework (to support the TFM)	Supplementary costing models (for institutional use)
1. Disciplines	• non-completion
2. Widening participation	
3. Course costing, covering: • non-standard modes of delivery as defined by HEFCE, • high cost exceptional provision as defined by HEFCE, • strategically important subjects • long courses	• specific courses or modules • other non-standard provision identified by institutions
4. Part-time provision	
5. High-cost base	
6. Specific initiatives	

5.2. Generally speaking, each factor is defined using the definitions currently used by HEFCE in the Teaching Funding Model where appropriate. We are not, for example, redefining what a long course is, or a part-time student or a WP student. Where appropriate the impact that a credit-based volume count would make on the costing model is described.

5.3. The principles and concepts discussed in chapter 3 have been used throughout. For each factor we describe costing models in terms of:

- their key characteristics
- alternative models
- practical issues regarding frequency and responsibility for producing the costs
- how costs of partnerships, complexity, and inefficiency can be identified
- the type of costs that would be identified in these models
- how the costs could be presented for use in a TFM (referring to model A and model B described in chapter 2, and/or by institutions)

- taking into account the value of producing information on the fixed/variable nature of costs, and whole life costing, where appropriate.

We propose that all costing models included under (1) to (6) in Table 2 form part of a consistent national framework that would also include the sustainability costing model (chapter 4).

5.4. The integration of the costing models under a consistent national framework would ensure that a consistent approach was taken, that auditability could be assured, and that it could link into existing models for costing such as TRAC. However, not all institutions might be required to use exactly the same methods for each cost factor under the consistent national framework – we cover this below.

5.5. The supplementary costing models do not cover the whole spectrum of costing models used by institutions: they are only those that are closely linked to the methods used in the consistent national framework.

Cost model 1: Disciplines

5.6. Different costs of disciplines reflect the resources required to teach different subjects. Their reflection in the TFM is necessary for the fair and equitable distribution of funds.

5.7. The discipline weightings applied in the current TFM have a significant impact on the prices that are allocated to students in each price group. Price group weightings increase the student units used in the allocation of the standard resource by 32 per cent[13], compared to the premiums (part-time, foundation degrees, small institutions, other institutions, historic buildings, long courses, London weightings) which together increase student units by 9.4 per cent.

Definition of discipline

5.8. The term discipline is currently defined in a number of ways:

- cost centres in HESA – where institutions currently map the costs of their academic departments to 41 cost centres
- price groups in the TFM – HEFCE has allocated each cost centre to a price group using data on cost levels from HESA. Each price group carries a weighting, which is applied to the student numbers reported against each group. There are currently four price groups
- other Funding Councils use different definitions

[13] See Table D: Calculation of 2005-06 standard resource, at this web address. www.hefce.ac.uk/finance/fundinghe/hefcegrant/granttables.xls. This excludes allocations for WP students.

- HEFCE and the Research Assessment Exercise (RAE) use nearly 70 Units of Assessment for Research which can be mapped onto the HESA cost centres

- department – a term used in TRAC to mean a management unit. This is institutionally defined

- discipline or subject type – a term used in TRAC. Under annual TRAC departments are classified as one of three discipline or subject types – clinical, laboratory and classroom/desk/generic. This classification is determined by institutions. These are then used in research project costing (TRAC fEC), where a minimum of two Research estates rates – for laboratory and desk-based projects – must be identified and applied.

5.9. There are other terms such as subject, and programme titles, which would define the precise sub-discipline or area being taught. These are defined by institutions. We use the term 'cost centre' in this chapter. As the TFM allocates funding on the student numbers recorded against HESA cost centres, these should determine the definition used to derive the costs.

We propose that departments are mapped onto HESA cost centres, with resources allocated to more than one cost centre if necessary. This mapping would be carried out according to current HESA guidance.

The use of cost information

5.10. Cost information has informed the discipline weightings that are currently used – costs reported by cost centre in HESA provided the basis for the allocation of cost centres to price groups.[14] Some subjects were not considered to be fairly treated under this method and specific reviews of their cost or resource levels have been carried out. In particular there have been reviews of education and psychology, and (recently) sports science and media studies. [15]

5.11. The costs of performing arts institutions have been identified separately from that of the price groups, and specialist provision receives premium funding, loosely based on costs.

5.12. We have used the term discipline weightings – we mean the relative costs of each discipline, expressed in relation to the lowest cost discipline, generally described as 1.0. Discipline weightings are currently used to reflect the different costs of subjects in the TFM. Given rationing of funds, it is likely that this will continue to be the means of allocating funds to disciplines.

5.13. There is an alternative to using costs – resources could instead be used to identify discipline weightings. All subjects with a certain quantum or value of

[14] See, for example, Funding method for teaching 2004-05 (HEFCE 2004/24).
[15] A cost study informed the education/sport science price group allocation – HEFCE 98/65.

equipment or where the teaching environment requires supported small group learning (such as in laboratories, or studios) could be classified as higher cost than subjects without these demands. This could be done using a zero-based approach (looking at should-be costs); or an actual approach (looking at current provision). However, an approach that focuses on resource requirements rather than cost has a number of limitations:

a. It would require the type and volume of resources used, or teaching methods, to be described in a way that would be relevant across all subjects. This would be very difficult and time-consuming. This was recently done in media and sports science[16] where three types of facility were described (standard, specialised, highly specialised) and institutions asked to use these descriptors to allocate their student numbers. However, the descriptors were used internally for comparisons within each discipline – the descriptors were not the same for both media studies and sports science.

b. There are challenges with a zero-based approach which were covered in chapter 3.

c. Even if disciplines were allocated to a discipline group in this way, there would be no obvious way of establishing the relativities between groups, without costing the different levels of resources.

d. This approach would be difficult to apply to central service costs (although it could be used for estates). Central service costs constitute around half of teaching costs.

We propose that cost information is used to inform cost weightings for each cost centre. This should be fEC, not marginal or variable costs.

5.14. However, comparator resource levels are useful in understanding costs, and we cover this further below.

Expression of the costs

5.15. In order to (a) classify cost centres to discipline groups, and (b) calculate the relative weightings of each group, absolute costs of each cost centre must first be established. These would then be divided by the number of relevant students, to provide the cost of teaching a student in each cost centre. These can then be compared, cost centres then classified and group weightings established. The precise number of discipline groups would be for HEFCE to determine, depending on the distribution of the cost centre figures.

5.16. In order to ensure that the weightings can then be applied to the student FTEs recorded in Higher Education Students Early Statistics (HESES) /HESA and used by HEFCE in its TFM, the students used to derive the cost weights should be defined in the same way as for the funding model.

[16] A review of resources/costs in cost centres 30 (media studies) and 38 (sports science and leisure studies), to inform their allocation to price groups, was announced in HEFCE 2005/13

We propose that the HESA definitions of students recorded against each cost centre should be used in the costing model.

Alternative costing models

5.17. The main alternatives in establishing absolute costs of each cost centre are:

a. to use the existing weightings
b. to use HESA data
c. to cost resources
d. to use TRAC data.

a. and b. Existing weightings and HESA data

5.18. Existing weightings are based on HESA information. Academic department costs currently reported under HESA do not represent the cost of Teaching, because:

- they include the costs of Research and Other activities (except what used to be called direct research project expenditure)
- they do not include most of the costs of central services or estates
- they do not include all the costs that should be in an fEC – they do not include the infrastructure adjustment or the cost of capital employed (COCE).

c. Costing the resources used

5.19. The costs of each cost centre could be established by costing the resources used by each department for their teaching provision. As discussed above, zero-based or actual resources could be costed. This is a bottom-up costing method. It would define what resources are necessary to teach each student.

5.20. The problems with this approach include:

- it is not easy to define what resources are necessary to teach a student of each discipline. This is even more difficult to do whilst ensuring high teaching quality; high academic standards; efficient management; and appropriate levels and type of quality assurance, scholarship, and teaching informed by research

- there is no definable output that could be costed (a degree in one institution does not cost the same as a degree in another institution, because of the different ways they are taught)

- the costs of achieving a quality output will also vary by institution, irrespective of subject

- an average student on a typical course that is typical for each cost centre would be difficult to establish. In practice, this might mean

considering what resources are necessary to teach a student for each module or course

- within a cost centre there will be different mixes of subjects
- it would not be possible to use a bottom-up approach for many of the resources required – in particular central service costs, including libraries and C&IT, but also many of the costs in academic departments such as the support time of academics,[17] secretarial time and non-course specific costs
- this would be very time-consuming
- it may not reflect the resources actually used in any one institution.

5.21. We do not consider that this approach is practical, or that it would produce sufficiently robust information. However, we do consider its use further for course costing, discussed below.

d. TRAC data

5.22. TRAC data could produce an historical fEC as defined by TRAC. These costs:

- are currently produced by all institutions in a consistent and robust way. The exception here is in institutions with dispensation
- cover Teaching only, and not Research (thus addressing the two significant problems with the HESA data)
- might anyway be further developed to provide information for sustainability, where it is proposed that the costs of HEFCE-fundable students are separately identified (see chapter 4). The further use of the same model to produce cost centre costs would strengthen the concept of a consistent national framework, and make implementation easier for the sector.

The cost centre weightings should be based on absolute student costs identified through TRAC.

5.23. We note that some individuals in the sector occasionally question the robustness of TRAC. This depends upon individual academics recording their time properly, and if this is not taken seriously by those academics or their managers, or institutions, TRAC data will be less robust. The issue is about implementation in some parts of the sector rather than a criticism of the TRAC methods themselves.

[17] Time that is not directly related to a project, programme or student. This includes administration, management, university committees and scholarship.

5.24. There is anyway a suite of quality assurance methods in place to ensure robustness. This is currently being reviewed, fully to take into account the needs of TRAC fEC (estimating and reporting costs on research projects). Robustness can also be improved through formal (or even informal) benchmarking – which is not currently being done adequately in the sector. We cover this below.

The review of TRAC quality assurance processes should take into account the robustness required to produce costs that will be used to inform the TFM.

Restricting the costs to cover discipline factors only

5.25. TRAC costs of HEFCE-funded Teaching would include the costs of all provision funded by HEFCE through its TFM. However, the costs of a number of different factors need to be identified separately as we have shown in Table 2.

5.26. We listed a number of reasons why it is not possible to identify the costs of a student in each cost centre using bottom-up principles – these reasons also preclude establishing only the costs of these students that reflect discipline factors.

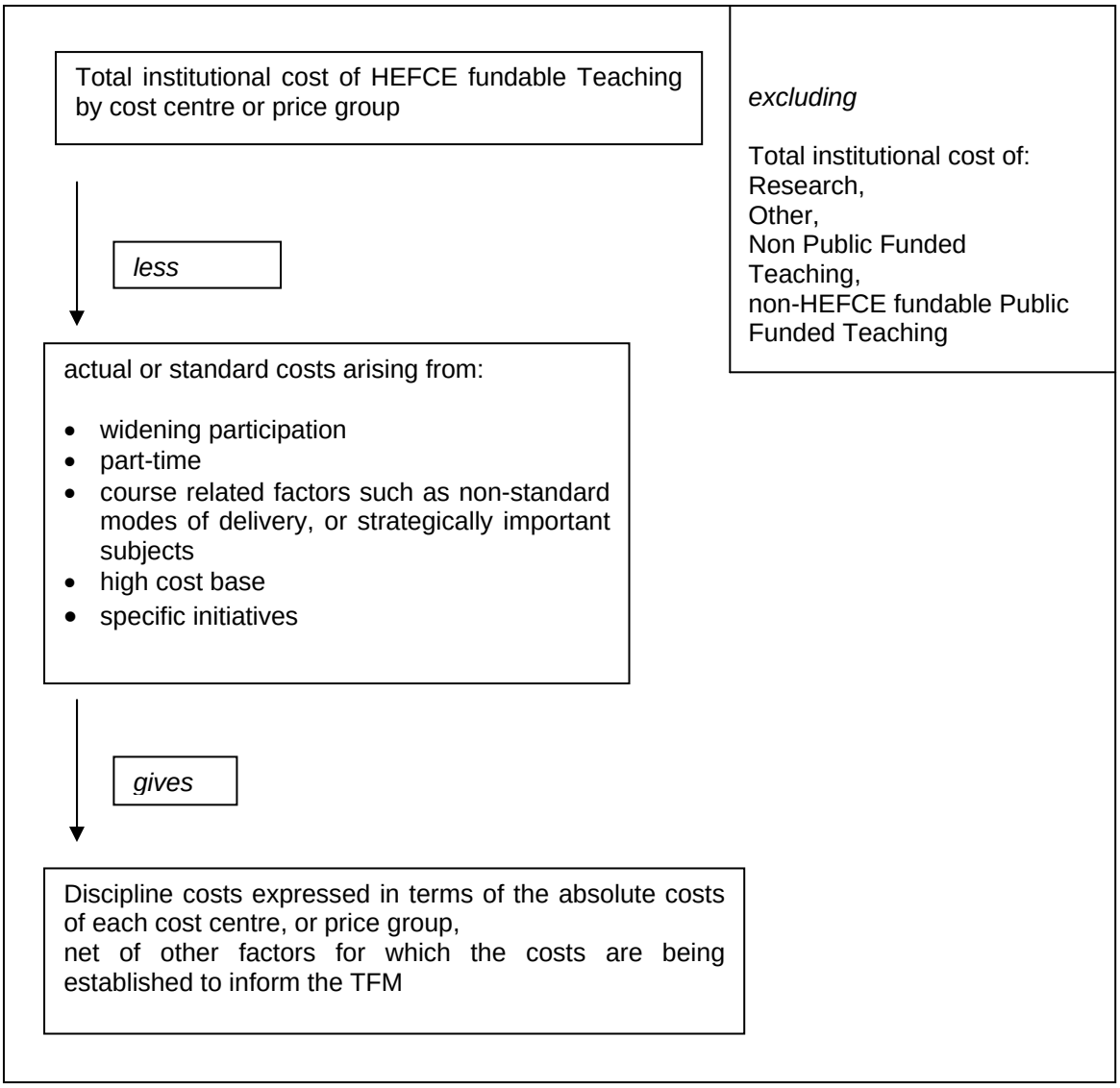
5.27. The practical, and simple, way forward is to establish discipline or cost centre costs having excluded the costs arising from other factors (cost factors 2 to 6 in Table 2), so that cost factor 1 – discipline – becomes the residual or balance of costs. This is illustrated in Figure 4.

We propose that cost centre costs are reported net of those arising from all the related cost drivers except discipline.

5.28. The factors to be excluded are listed in the central box. If considered material, these may be excluded using standard or actual costs – we consider this under each heading in the rest of this chapter.

5.29. The two factors that are not included in the central box are the costs of long courses and short courses (other than the additional cost of part-time provision). These would be reflected in the volume factor – the student numbers used to divide absolute costs to produce a cost per student.

Figure 4: Establishing the cost of disciplines



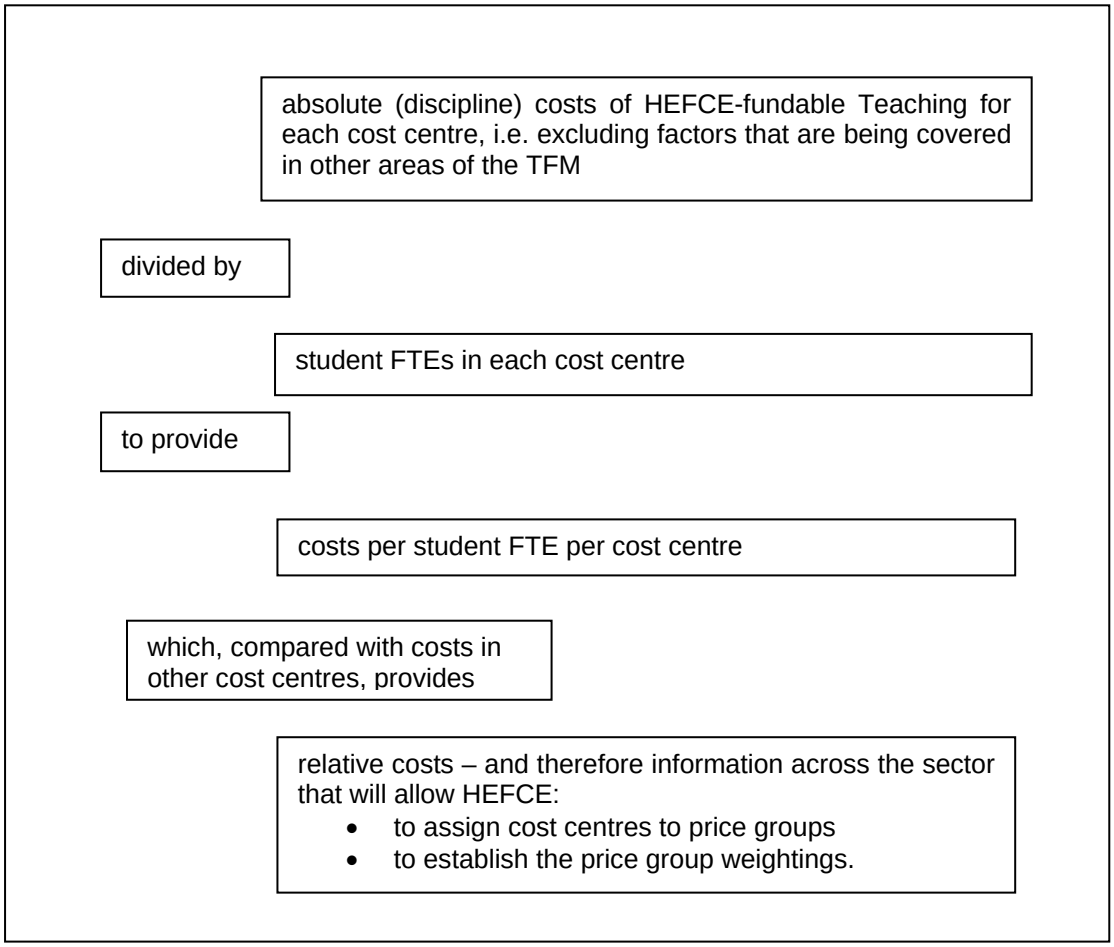
Establishing a cost per student

5.30. The process to establish a cost per student is shown in Figure 5 following.

We propose that a cost per student FTE is calculated for each cost centre. This would then be used to assign cost centres to price groups and to calculate the relativities between price groups.

5.31. Student FTEs would need to ensure equivalence of teaching load – taking into account the period of study. Thus those undertaking less than a FT programme would be weighted at less than 1.0 (whether established through a credit-based framework or some other method as at present); and those undertaking more than a FT programme would be weighted at more than 1.0. We next discuss how the weighting on long courses could be informed by costs under cost model 3 (non-standard course costing).

Figure 5: Establishing a cost per student



5.32. The cost per student FTE could reflect students either entering a programme of study, or completing that programme of study. We use the term 'completion' as currently defined by HEFCE and used in the current funding model. We understand that there are no plans to fund Teaching on the basis of students starting courses; or of any other student progression through to completion; or on achievement. However, any introduction of a credit-based framework across the sector, and its use in the TFM, would redefine completion' as it is likely to recognise smaller units of study, and 'gaining an award' rather than 'finishing'.

5.33. Dividing cost centre costs by the number of students who complete means that the costs of those who do not complete are included. This is a significant cost in some institutions. It may be inappropriate for this to inform the TFM – we note from work that the Higher Education Consultancy Group (HECG) and the Commonwealth Higher Education Management Service (CHEMS) have undertaken for HEFCE[18] that its Equal Opportunities, Access and Lifelong Learning (EQUALL) group stated: '…we do not fund HEIs for the portion of their provision already delivered if a student drops out before the end of their period of study'. This means that the cost of students

[18] A report for HEFCE on "A review of Funding Teaching by Credit" by the Higher Education Consultancy Group and CHEMS Consulting, published in August 2005 at www.hefce.ac.uk/pubs/rdreports/2005/rd19_05/rd19_05.doc The EQUALL quote is at paragraph 3.5, p10.

who do not complete should theoretically be removed from cost centre costs.

5.34. If these costs cannot be removed, then rationing (funding at less than the full cost) would also meet the objective given by EQUALL, but in a less informed way.

5.35. With cost information, it would be possible to assess whether institutional fees (those that are non-returnable on non-completion) are adequate to cover the costs of non-completion and this too could inform the TFM.

The costs of non-completion

5.36. The costs of students who do not complete are therefore of interest for two reasons:

a. For good management practice. A better understanding of the costs of non-completion should help to inform policies about resources (and perhaps funding) aimed at improving retention.

b. HEFCE may wish to consider further how the TFM recognises the income and funding of students who do not complete.

5.37. Definitions are crucial here. An extensive discussion of definitions of completion is given in the HECG/CHEMS report and we do not cover that here. However, we have drawn upon the report to assess the implications for costing non-completion (and other areas).

Before non-completion can be costed, definitions have to be agreed or confirmed in a way that can be applied across the sector.

5.38. If credit-based frameworks are used, the numbers of students who do not complete would presumably be fewer (and therefore the costs would be less). (Conversely, the number of completing students would be higher.) However, this change may lead to different patterns of recruitment which may also impact on numbers.

5.39. Costs of students who do not complete are likely to vary depending on:

a. Whether it is possible to plan for non-completion or not. Where non-completion is forecast to take place (either within the first two months, or over the whole year) then resource use can sometimes be planned to minimise the costs of these students – for example by packing them into lecture rooms in the first few months. This may not be very good pedagogic practice, but if it does take place, the costs attributable both to early leavers and to those remaining would be less.

b. The point in the year that non-completion takes place – costs per student will vary for: students who do not turn up at all; those who do not complete any formal course (such as a module); those who complete a module but do not complete a programme (and there would be a range here, for example from 10 to 110 credits of the 120

that a student might have enrolled on); those who complete but do not succeed in attaining a qualification.

c. The amount of effort put into recruitment (interviewing, advice on most appropriate course of study) and into encouraging retention. This may depend upon the type of student.

d. Whether bursaries are a cost or a reduced fee.

5.40. Costs may vary between part-time and full-time students; and vary between WP students and others. (During our studies of the costs of PT and of WP we were told non-completion in these areas was higher, but no robust evidence was available.)

5.41. Because of the work necessary to define non-completion, and to investigate its costs, we have not included non-completion as part of the consistent national framework, but as a supplementary costing model at this stage.

We propose that a study is carried out to assess the appropriate method for costing non-completion.

5.42. Such a review might involve a sample of different types of institution, and look at different disciplines and types of student. It could consider:

a. What types of costs are incurred by/for a student who does not complete (some may be marginal if non-completion is planned).

b. How these costs vary by:

- type of student
- period of study
- discipline or other factors.

c. Whether this method could be used as a costing model by institutions.

d. If not, (for example because it is too complex) what method could HEFCE use to:

- establish costs
- encourage institutions to investigate costs further. (What would it cost to raise the retention rate?)

Practical considerations: TRAC vs HESA

5.43. Institutions have cost models based on data in each department, which is an institutionally defined term. HESA cost centres are generally not used to provide management information, and TRAC rarely reflects the HESA structure. Any production of discipline costs by HESA cost centre is unlikely to be useful for internal management purposes. However, standardisation of departments into cost centres would be necessary to provide consistent data for use in the TFM and for benchmarking. (As an example, medical

schools need to be analysed into clinical and non-clinical cost centres.) This could require a TRAC model and a TFM model to be maintained in parallel, which would be a significant burden.

5.44. Institutional department costs are normally centred around 'recruiting' departments, while HESA cost centres are defined as 'delivery' departments. Both costs and student numbers are therefore allocated in a different way for HESA and TRAC.

5.45. Academic staff time is not collected robustly at the level of department by all institutions. TRAC only requires robustness at the level of Teaching activity for each discipline group (clinical, laboratory and non-laboratory – institutional defined). Requiring robustness at a lower level, by department, would be a significant burden. This would also be challenging to achieve, as robustness would actually be required at the level of cost centre (not department).

5.46. To ensure the costing model is not too burdensome and that the data are as useful as possible, we propose that:

a. A one-off exercise is done during the first round of cost data collection where a sample of institutions provides data at cost centre level. They would need to be collecting academic staff time robustly at the level of department already. Their allocation of department costs between cost centres would need to be robust. The recording of clinical services time (as either Other Clinical Services, or Teaching) would need to be consistent. The sample would need to reflect the sector and in particular institutions with medical, veterinary and dental schools, and performing arts institutions, so that price groups in these disciplines were properly informed.

   The sample institutions would need to provide the data two years running, to ensure robustness (our experience of introducing cost models is that robustness significantly improves once checks for reasonableness, benchmarking, etc have been undertaken). This would be a non-trivial task, and it might be appropriate for them to be given help as they undertake this.

b. This cost centre information would inform the allocation of subjects to price groups.

c. HEFCE would draw up a high-level specification of the resources in each price group – what makes a Band B subject different from Band C. This would provide criteria that could be used to classify subjects which may not initially sit comfortably within any one price group.

d. Discipline cost information is then provided by all institutions, but at a higher level than cost centre – i.e. by price groups.

e. All institutions are required to ensure that their academic staff time data are robust at the level of price group. (If four price groups are used, rather than the three TRAC discipline groups, this is likely to mean additional work in data collection for many institutions, but not all.) The work involved in this would be reduced if robustness requirements were reduced, e.g. not required for teaching in clinical medicine alone (as opposed to the medical school as a whole) or for a

price group within an institution where there were low student numbers.

f. Institutions are required to ensure that their allocation of departments to these price groups follows the allocation of cost centres to price groups, subject to materiality. Some high-level methods could be used to do this, to avoid them running two models.

g. Institutions are required to follow the QA procedures laid out in TRAC, and, in particular in this context, to ensure that fair and reasonable reviews of the data are undertaken, and that benchmarking processes are carried out.

We propose that the discipline costing model would operate:

a. **Initially at a cost centre level for a sample of institutions for the first two years, which would inform the allocation of cost centres to price groups. This could be revisited periodically (such as every three-to-five years). This would require significant effort, because of the different classification of departments internally and for HESA, and it would be appropriate for support to be provided to those institutions.**

b. **Annually at the level of discipline group (price group) for the rest of the sector. Those institutions would be required to ensure data (costs and student numbers) were robust at the level of price group; and that departments were mapped onto price groups consistently.**

5.47. Guidance would be provided to both sets of institutions, and the results of both exercises would be published. The model would be fine-tuned periodically. It would inform the allocation of cost centres to price groups, and the relativities between price groups. It would be used for benchmarking, which we cover next.

Benchmarking

5.48. Institutions should be required (or at least encouraged) to benchmark their results. This will improve their understanding of the figures, increase the robustness of the figures, ensure that they are accepted (and used) by institutions, and would facilitate institutional management by helping in the identification of inefficiency or gaps in spending.

5.49. HEFCE would be able to attain a better view on the reasons for cost differentials between institutions and desirable or should-be levels of costs. HEFCE could also assess the impact of changes in teaching methods or resource levels over time, to inform the TFM.

We propose that a formal benchmarking process forms part of the consistent national framework.

5.50. The benchmarking model could involve:

- comparing annual discipline costs
- analysis at a level that would assist an institution in understanding the differences
- this analysis might include, *inter alia*, sufficient information that would allow:
  - better understanding of the fixed/semi-fixed/variable nature of costs
  - academic department information separate from that of central services departments – with cost driver information behind the latter
  - information on efficiency (such as cost per square metre) as well as productivity (such as students per square metre)
  - resource comparisons – staff time per student, equipment costs per student, etc
  - a link with Research (and Other) cost information to compare and understand the split of costs between activities
- institutional self-assessment to identify issues which it might wish to explore in benchmarking sessions
- national benchmarking groups (formally facilitated) which would consider results and issues
- cost impact evaluations: consideration of 'what-ifs' – cost of improving quality, increasing retention, increasing innovation, etc.

5.51. This approach has worked well for annual TRAC, and more recently, for Research indirect and estates cost rates. It helps to stimulate institutional interest in understanding and managing costs better – why are their costs different, and should they be? Is it about the fixed nature of the cost base given the current number of students? Or academic salary levels? Or a different style of Teaching (which just demands more time)? What levels of central costs might be appropriate?

5.52. It is likely to uncover interesting differences in institutions' costing models that might materially affect discipline costs e.g. how farm costs are included in veterinary schools; how Other (Clinical Services) time is re-allocated to Teaching; how the costs of sports facilities are allocated to sports sciences; to what extent different institutions weight their indirect rates to take into account local academic Support (such as devolved libraries and local administrative units); and how franchising or partnership delivery might affect the costs. A well-constructed benchmarking proforma and process will help to highlight these issues.

5.53. This benchmarking model could be extended to include comparative resources, in time. The sample institutions providing cost centre data could lead to a comparison of the resources that different types of subject (or at

least disciplines) need (in the same way as the sports science and media studies work did). This could start to allow scope to question the way things are done, and, hopefully, encourage institutions to examine their provision.

Indirect cost rates

5.54. The cost analysis undertaken for the discipline cost model would provide data on direct and indirect/estates costs (as defined by TRAC). This could then be used to calculate indirect cost rates and estates rates (in a similar way to those calculated under TRAC for Research). These would then inform the costing of:

- new courses – an indirect/estates cost per staff or student FTE could be added to the direct costs of the new course
- academic activities – an indirect/estates cost per staff FTE could be added to the time of staff who are carrying out an activity. This would be useful for those activities that are funded separately in the TFM – such as Lifelong Learning Networks, CETLs, widening participation – or even when costs are being established for an activity for policy reasons alone – such as TRAC and external quality assurance.[19]

5.55. Unlike Research, there is no need to calculate an indirect/estates cost rate to inform or calculate the discipline cost per student (the use of the top-down method of costing ensures these are allocated to disciplines using a range of TRAC cost drivers, and the cost per student is an average of the discipline costs). However, widening participation and strategic initiatives such as CETLs should be costed on a full economic cost basis, and a simple method of calculating the indirect/estates costs on those activities is required.

We propose that:

- **a combined indirect/estates rate is calculated for Teaching**
- **this is calculated by:**
  - **taking the total indirect/estates costs from the costing model that calculated the discipline costs of Teaching (as described above)**
  - **dividing this by direct staff time on Teaching (from TRAC), and taught student FTEs – possibly incorporating weightings of staff and student FTEs informed by a short national study of costs and their drivers, or excluding WP time.**

5.56. This provides an indirect/estates cost per student FTE, and an indirect/estates cost per staff FTE (using a method of calculation that is the same as that used for Research). We discuss the use of these rates in other costing models later in this section, but would note that:

[19] regulatory impact, costs of external review of QA – refer footnotes 1 and 2

- these could be used together, or separately, in a costing model, as appropriate to the purpose of that model

- the indirect costs will include the Support time of academics, secretarial time and management time. Sometimes these are treated as direct costs in other models, and the indirect cost rate would need to be amended to remove any double-counting.

5.57. For simplicity, we propose that the indirect/estates cost rate is discounted, probably by a third, when used in costing models that have already included some Support elements as a direct cost of the activity being costed. (This could easily be evidence-based by analysing a sample of institutions' costs and identifying how much of the rate covered these types of Support costs.)

5.58. Whilst this indirect cost rate includes costs that are in the discipline cost model, they would also be a reasonable proxy for use in other costing models. Any double-counting of these indirect costs could be easily avoided in the design of the discipline cost model (i.e. any indirect costs included in other models would be deducted from discipline costs, if material).

5.59. We would not recommend that these rates were calculated by cost centre, as their robustness (and therefore usefulness) would be significantly reduced if this was done. Two rates – for laboratory and non-laboratory subjects, would be more robust.

Cost model 2: Widening participation

5.60. Widening access and increasing participation (WP) is a key government policy objective. The extra revenue from tuition fees, and the way this is spent, appear to be linked to WP. However, views of income and costs differ – students and their families look at tuition fees in a wider light (they expect it to be spent on an enhancement of the student experience, as well as outreach and bursaries), and institutions look at WP as all activities and funding related to WP – not just that arising from the extra tuition fee income. The costs of WP, and funding of WP, therefore need to be carefully defined to ensure that it is absolutely clear which parts of activities and money flows are being accounted for in the costing model.

5.61. The additional costs of WP are currently recognised by HEFCE under the allocations for widening access and improving participation (calculated outside the standard unit of resource) in the current TFM. This covers both access and retention. The level of this funding was informed by a study of the costs of WP, published in 2004.[20] In 2005-06 it accounts for nearly 7 per cent of the £4 billion Teaching funding grant.[21] It is, therefore, significant in size.

[20] 'The costs of widening participation in higher education', a study by JM Consulting Ltd for HEFCE, Universities UK and the Standing Conference of Principals (SCOP), January 2004. www.hefce.ac.uk/Pubs/rdreports/2004/rd03_04/
[21] £282 million of £4004 million recurrent funding for Teaching was for widening participation. 'Recurrent grants for 2005-06' HEFCE 2005/13.

5.62. One of the areas of most concern with the current TFM is the level of this funding, which is still considered too low by institutions in the sector.

5.63. OFFA is interested in the level of spending on WP activity, and has requested all institutions intending to charge higher tuition fees to submit access agreements. Institutions were asked to tell OFFA the additional income they estimate they will receive; and their investment in new bursary schemes and outreach from the additional fee income (including administration where appropriate). The overall costs of WP were not requested, only any investment from the additional income, and we understand from OFFA that no institution has as yet provided more than this in their submission. OFFA also states in its guidance on the completion of access agreements, that 'although critical to widening participation, retention is not part of (our) remit'.[22]

5.64. Potential and actual students and their families are now real purchasers – they are interested in what they are getting for their money. However, they are perhaps less interested in outreach activities than in the student experience (facilities, accommodation etc), as well, of course, as bursaries.

5.65. An analysis by the Times Higher Educational Supplement (THES) (6 May 2005) reported that vice-chancellors have said that priorities for 75 per cent of the new revenue (the proportion remaining after bursaries and outreach) would be to improve pay and campus facilities. This does not match the OFFA focus. It illustrates some of the issues around any statement about 'the cost of WP'.

We use the term 'cost of WP' to mean all activities that relate to widening participation and retention for groups of students, potential or actual, who are classified as WP.

Student populations

5.66. The WP student population is difficult to define coherently. For example, by definition there is no current student population for outreach activity. The Government itself is ambivalent about the definition of target WP groups.

5.67. Institutions develop their own target groups for recruitment, and self-determine which they call WP. They were encouraged to do this in the HEFCE WP strategies. Their WP strategies focus on students deemed to require additional support to attract or to retain (if they are to complete successfully) – the students they consider to be at risk. It is those groups that the institution considers to be WP, [23] and to whom WP activities are directed. WP costs need to be built up by examining these WP activities.

[22] Source: OFFA. Information on access agreements is available on www.offa.org.uk

[23] The student groups to whom additional support is targeted might therefore be defined in a any number of ways, including: parental experience of HE, parental income, socio-economic background, low-participation neighbourhood, ethnic minorities, mature students, students with disabilities, gender in under-represented areas, students from state schools (who meet some of the other criteria), students who are 'less prepared' for HE, anyone with entry qualifications below 200 points, specific groups such as refugees and ex-offenders. This list was drawn up during interviews in the 2004 WP cost study.

We propose that the WP costs to be established are the costs of the WP activities for the students to whom each individual institution provides additional effort or resources in attracting or supporting towards successful completion. This would include students with disabilities.

5.68. However, institutions are less than enthusiastic about labelling a student as WP, or as monitoring them as a distinct group once recruited, as they feel it might be discriminatory. They do not keep any student records with that classification.

5.69. Age, socio-economic group, geodemograhics, prior educational attainment, are all variously used to describe a WP student in funding models (including HEFCE's). These classifications are often very dependent upon the management information systems (MIS) that can provide robust data on students for all institutions. The HEFCE model in effect uses the available MIS as a proxy for the students it wants to fund – this is not the same as the students the institution considers to be WP.

5.70. Institutions do not find it possible to identify WP activities that are carried out for the students that HEFCE classifies as WP in the TFM (or to identify whether these students actually access the additional support made available from WP activities).

5.71. This means that the funding and costing models operate with different student populations and numbers. Whilst not ideal, this would not matter if the student data used in the funding model are considered to be a reasonable proxy for WP students, which appropriately provides comparative data for all institutions.

Issues in costing WP

5.72. WP is not just one activity. There are many cost drivers:

a. The costs of outreach are not determined by current student populations. They are affected by the amount of funding allocated to let the activity take place; the enthusiasm and commitment of local academics; the priority given to WP by the department and the institution (itself a factor of the mission of the institution, and/or its need to recruit students); and the volume and type of the target groups.

b. The costs of outreach are very different from the cost of retention – the support that a WP student receives in the institution that encourages them to stay, and to complete their programme of study. This can be considered to be a cost per current student.

c. But there can be other costs often associated with WP – the curriculum structure and the educational framework, the provision of

flexible learning including accreditation of prior (experiential) learning AP(E)L, for example – that are costs to the institution as a whole.

5.73. Costs can also be complex to establish because:

- the additional support that is provided to a WP student is generally on offer to all students, and can be taken up by other students
- there is additional activity, particularly in outreach, funded by other providers or outside the TFM (such as Aimhigher)
- the funding models might recognise WP costs in other lines of funding – for example foundation degrees; part-time students (access courses, continuing education); and infrastructure to address disabilities issues
- as discussed earlier in this chapter, non-completion costs are difficult to identify
- academics tend to cost WP on the basis of the ear-marked funding they receive (including 'their share' of the HEFCE WP funding allocated on the basis of HEFCE-defined student numbers) – rather than on the activities they actually carry out, or need. Marginal costing, plus the 'direct activities' of a central WP office, have generally been used to cost WP in the past
- disability is often not included as a WP issue in institutions – and there is often a separate central department responsible for supporting institutional action in that area
- activities are widespread, and few WP officers will know of everything that is going on, despite their focus on a WP strategy
- some institutions have WP as a core part of their mission. In this case it can be difficult to identify what is WP and what is not WP.

5.74. The costing model developed in the 2004 study sought to find a way around these issues. Some techniques employed to do this were:

a. Basing discussions on a set of defined WP activities.

b. Not requiring details about the numbers of WP students that an institution is supporting.

c. Asking academics, not only the central department dealing with WP, about their WP activities.

d. Being very clear that some costs should not be included (for example, non-traditional modes of delivery, foundation degrees, access provision with HEFCE-fundable students, capital infrastructure to address disability issues) but that others which might not otherwise have been identified should be included (recurrent spending to address disability issues, losses in continuing education departments,

activities by academic staff which might not be funded internally through a 'HEFCE WP allocation').

e. Making consistent assumptions about the costs of flexible learning frameworks, and retention (even if these are not well cost-informed).

f. Specifically identifying activities that are embedded, or which all students may benefit from (not just WP), and using simple methods for excluding some of the costs to recognise the use by non-WP students.

5.75. The use of these techniques in the 2004 study did not mean that the costs were precisely right – but they did provide a reasonable indication of the level of costs in an institution, on a comparable basis.

We propose that a model that produces data to this level of robustness is considered acceptable i.e. 'fit-for-purpose'.

Alternative cost models

5.76. The aim of the cost model would be to establish the additional costs of outreach and Teaching and learning that support WP students, which would be used to inform the TFM and institutional management. This model would be part of the consistent national framework.

5.77. Under any model, the treatment of bursaries would need to be agreed. If bursaries are considered a cost, then those associated with 'WP students' would need to be included in the WP cost model.

5.78. The main options are:

a. To use the average costs per (HEFCE-fundable WP) student developed in the 2004 report. All institutions would use this average figure as their 'WP cost' (we suggest that the costs are too significant to be left in discipline costs).

   However, this average cost would not reflect the institution's own activity or resource levels (the 2004 study found this varied significantly between institutions). This area is of such importance to Government and institutions that it merits their undertaking some work internally to identify their own cost levels.

b. For institutions to identify one of a number of cost levels (probably expressed as the cost per HEFCE-fundable WP student) that indicate relatively high, low or medium levels of spending in this area. A short self-assessment proforma could be used to help them identify the most likely level of spending. This would then provide the WP cost in the consistent national framework.

c. For institutions to carry out a more comprehensive costing exercise of their costs of WP. This could follow the methodology and logic given

in the 2004 study, which could be developed into a formal WP costing tool for use by institutions.

d. To carry out detailed studies in certain areas to improve the robustness of assumptions about the additional costs of flexible learning frameworks, and non-completion;

e. For a should-be level of costs to be identified as well as current costs. This would examine the benefits and costs of increasing the resources an institution puts into the various types of WP activity.

5.79. We understand that HEFCE has already been considering extending the WP cost methods used in the 2004 study in some of these areas. We suggest that any of (c) to (e) above would be useful in informing both the TFM, and institutions' practice. The further down the list, the more useful the information, but the greater the burden on institutions.

Cost model 3: Non-standard delivery (course costing)

5.80. This cost model would produce the costs of a programme, course or module:

a. to inform the HEFCE TFM:
- non-standard modes of delivery as defined by HEFCE
- high-cost exceptional provision as defined by HEFCE
- strategically important subjects
- long courses

b. for institutions:
- to cost other non-standard provision where they wish to understand costs better, or to inform pricing.

5.81. This section describes a non-standard course cost model that produces historical costs of selected courses on an fEC basis. Institutions would also be interested in costing new courses, but we do not cover that in this report (although many of the techniques would be the same, and the indirect/estates cost rates could be used for this purpose, suitably indexed).

The non-standard course cost model identifies the historical fEC of a specific course which could be a module or FTE programme of teaching.

5.82. The model focuses on the costs of one course – not the average cost of all courses in one department or cost centre (which could be obtained by a straight arithmetical calculation, particularly if a credit framework was used). Some institutions are interested in costing all of their courses and already have course costing systems that do this.

Institution-specific provision

5.83. Some of the institution-specific premium funding arises from the exceptional nature of the provision carried out in those institutions.

5.84. Such provision would need to be defined by HEFCE, as there is a wide variety of provision, and many institutions could claim to be 'exceptional'. It would need to exclude high-cost provision that arises from other factors, such as PT delivery in the evenings (assuming this is adequately reflected in the PT costing model), types of disciplines (such as performing arts, covered in the discipline costing model) or high volumes of WP students (covered in the WP costing model).

5.85. If this funding is to continue then it could be cost informed by a non-standard course cost model (perhaps operating at the level of department rather than course).

Long courses

5.86. Long courses are defined as courses that last for 45 weeks or more within one academic year (excluding those in price group A where the course length has already been taken into account in the price group weighting). They are currently recognised through the volume measure, with students weighted at 1.25FTE.

5.87. It would be possible to use a non-standard course cost model, applied to a sample of courses, to assess whether this weighting was appropriate.

5.88. With a credit framework this may not be required. If this meant that full-time study was defined as 120 credits (say) then credits taken in addition to this (whether in parallel or at the end of the normal academic year or in vacations) could be used to define the FTE count for the volume measure.

5.89. However it may be appropriate to reflect a 'discounted cost' for a long course student. If some indirect costs are incurred on a headcount basis, rather than an FTE basis, as discussed below under part-time, then this would also apply to long course students. If they require 25 per cent more resources because of the length of time they are being taught, this should perhaps be reduced to say 12 per cent or 20 per cent to reflect the fixed nature of the indirect costs.

5.90. Running a one-off cost model exercise similar to that used to establish the additional costs of part-time students could establish any discounted cost of long courses.

Alternative modes of delivery

5.91. HEFCE is interested in the costs of foundation degrees, sandwich courses, and non-standard modes of delivery such as e-learning, workplace learning etc. It is essential for any type of course that is being costed to be tightly defined. Of these, only foundation degrees and sandwich courses are identified separately and funded differently in the TFM at the moment – the first through a premium applied by HEFCE on student numbers; the second

through the volume measure generated by institutions (0.5FTE). Most of this provision is considered to be part of the normal quality standard provision and should not be treated as out of the ordinary.

5.92. There are other forms of 'alternative modes of delivery'. As well as off-campus provision, a few institutions also offer provision in the evenings. This too is not recognised in the current funding model (although some costs might be included under the PT premium).

Strategically important and vulnerable subjects

5.93. Additional costs of strategically important and vulnerable subjects may arise through low student demand. That type of additional cost could be established through a course cost model.

Treatment in the consistent national framework

5.94. The different treatment of these courses in the TFM requires a different approach to including the costs of these courses in the consistent national framework:

a. The costs of courses that are funded on a premium (such as foundation degrees, or (restated) institution-specific funding, would be excluded from discipline costs, and would be covered in a separate 'foundation degree course cost model' for example.

b. The costs of students on courses whose relative funding is described through the volume measure (such as sandwich students and long courses) would be included in the discipline costs. However, the costs of these students/courses would be established through a course cost model that could be used to inform the TFM.

c. The costs of courses that are not recognised separately in the TFM but are of interest to HEFCE or institutions would be included in discipline costs, but these could also be established separately through a course cost model.

5.95. HEFCE would need to decide whether it wished to obtain further cost data on the courses that it recognises in its TFM.

5.96. A study of the costs of non-standard modes of delivery has been carried out in recent years.[24] This covered foundation degrees, sandwich degrees, e-learning, d-learning, workplace learning, and AP(E)L (as well as part-time provision). The costs of foundation degrees and sandwich courses, calculated on an fEC basis, has already informed the TFM and it may not be necessary to establish them again so soon. Strategically important subjects may be funded at a premium that is not informed so much by cost as the need to provide incentives.

5.97. However, under (a) above, the costs of courses funded separately should be excluded from the discipline costs. The full range of options is:

[24] 2003. See footnote 6 page 29.

a. For the costs to be left in discipline costs, on the grounds of materiality (this provision is not high volume), and, perhaps, that most disciplines are affected broadly to the same extent (we do not know if this is true).

b. For institutions to remove a notional cost – perhaps expressed as the level of funding – from discipline costs.

c. For institutions to identify whether each type of their provision is being provided on a high or low cost specification – and to select one of two notional costs per student that would remove the costs of this provision from discipline costs.

d. For institutions to cost this provision themselves, either annually, or periodically, and use this information to remove the costs of this provision from discipline costs.

5.98. The first is least bureaucratic, but arguably does not encourage institutions to consider the resource implications of their provision. The fourth provides the most detailed information, and involves institutions considering their provision, but is the most burdensome and arguably is not required to inform the TFM.

5.99. We suggest that the third option may offer an appropriate way forward. We have therefore built the concept of a specification into the course costing model.

For provision that is specifically identified in HEFCE's TFM, such as foundation degrees, institutions should use an appropriate standard cost to reflect their costs in the consistent national framework, described above.

Approaches for a course cost model

5.100. There are three main approaches that we have considered for a course cost model and these are shown in the box after paragraph 5.107. We propose that a course cost model should be based on the second approach in the box (model 2) which combines a bottom-up approach to the costs of the course, with the use of top-down indirect/estates costs.

5.101. Some further features of this approach would include:

a. Establishing the cost of a standard average course in the same institution, in the relevant discipline group, for use when a single non-standard course is being costed. The techniques in model 3 would then be used to identify the pedagogical and resource differences (or similarities) between the non-standard course and a standard course, and their relativities.

b. Using simple techniques for identifying different levels of indirect/estates costs (for example, if the course is wholly off-campus,

no estates costs; if the course is significantly off-campus compared to a standard course, half the estates costs).

c. Incorporating a high-level adjustment to the academic costs per course when all courses in a department were being costed, to ensure that they totalled the actual salary costs of Teaching.

d. Encouraging institutions with significantly higher levels of provision, compared to the sector as a whole, to review the impact of this more broadly on the levels of their indirect (central services) and estates costs.

e. Reflecting non-completion, which for non-standard courses can be significantly different to that of a standard course.

5.102. This model would identify the cost per student of each course being costed, having identified the different levels of resources necessary for its delivery, as compared to a more standard course.

5.103. The techniques could be formalised into a structured questionnaire to assist academics in understanding the different resource levels. For example prompts might ask them to consider extra time spent on partnerships, or the challenges and complexity of new types of delivery or technology.

5.104. Some of the costs of complexity in these arrangements would accrue from the type of student – for example WP, or PT. It would be difficult to exclude these costs. A simple approach would be to discount the total course cost per student by an appropriate amount (informed by the WP and PT costing models) to remove this double-counting.

5.105. We note that the above course cost model considers only recurrent costs. It does not consider whole life cycle costs.

5.106. Where an institution has exceptional levels of non-standard provision it may be difficult for them to assess the costs of a standard average course. They could however compare their non-standard costs with average sector costs obtained from the discipline cost model 1.

5.107. Where the TFM funds a course separately (as with foundation degrees) the total costs of these courses could be calculated by each institution and deducted from the discipline cost model. In practice, this is probably unnecessarily bureaucratic, and a preferred solution would be to:

- either deduct the premium from the discipline costs as a proxy for the additional costs of foundation degrees

- or leave the foundation degree costs in the discipline cost totals as they are not material.

Alternative models for course costing

(1) Identify the delivery hours required for the course, and apply a salary cost per hour based on delivery hours only (total salary costs divided by 450 delivery hours pa). Add the non-staff costs required for the course. Apply the indirect/estates cost rate (excluding the costs of academic support time) to each staff and student FTE. Divide by the number of students on the course. Providing a cost per student FTE on the course.

This is a common model in HE, illustrated in the recent Joint Costing and Pricing Steering Group's (JCPSG) good practice example in course costing.[25] However, delivery hours might account for less than one third of the time an academic spends on Teaching or supporting learning. That means that most of the academic salary attributed to a course has been related to what they do for just one third of their time – even though there is little relationship between delivery, and time spent on pastoral support, administrative, assessment, preparation and general administration/management. In some modes of delivery, the amount of formal 'delivery' can be either significantly less (replaced by tutorial support or email support for example), or more (if extensive one:one or small group work is required). Where this model is based on workload allocation systems the data become less robust again. Although easier to count, they may not reflect reality, as these systems often involve notional allocations for such activities as dissertation support, 'more complex' teaching and new courses.

(2) Identify the delivery hours required for the course, and identify the pastoral, administrative, assessment and preparation time. Apply a salary cost per hour based on total available time (e.g. 1,650 hours pa[26]). As above, add non-staff costs required for that course, apply the indirect cost rate and divide by the number of students. Providing a cost per student.

This overcomes some of the problems of the first approach: the focus is on the whole Teaching and learning experience, not just delivery. However, records are not kept at this level, and each academic would need to estimate their time on each course being costed. As with alternative model (1) this approach does have the problem that if the costs of all courses in a department are added together, this is unlikely to total academic staff salaries attributable to direct Teaching activity under TRAC (as the 1,650 hours may not be the actual time worked in a year).

Some institutions have introduced course costing as an integral part of their TRAC academic staff time recording. This translates hours into percentages and removes the problem of academics working longer – or shorter - hours than that assumed in the salary cost per hour. (It is debatable, however, whether such an approach provides value equal to the effort required, if carried out year in year out.)

If this method is used for costing all provision in a department a similar approach could be used – the course cost built up by hours multiplied by salary/hour would be adjusted by an appropriate percentage so that it totalled the actual academic cost attributed to Teaching in a year.

(3) Establish the costs of a standard average course (using the techniques in (1) or (2) above). For each cost element, consider whether the costs of the non-standard course are higher or lower, and by how much (50 per cent, 10 per cent). This was the technique broadly used in the alternative modes of delivery study.[27]

[25] Available via www.jcpsg.ac.uk/

[26] 1650 is the standard working year used in TRAC. It includes Support time.

[27] Broadly, the large number of different types of courses being studied precluded the consultants from establishing a robust standard average course costs for each department. Instead, a sector standard was established by drawing on previous studies - this provided the absolute value of each cost element. Comparisons with standard average courses in each department were then made as a result of discussion – leading to the per cent relativities – that were then applied to the sector standard to lead to an overall relativity.

Cost model 4: Part-time provision

5.108. There are two aspects to part-time provision. The first is that a student who undertakes shorter periods of study than a full-time student presumably requires less teaching. This is currently handled through the volume measure (use of FTE) in the TFM.

5.109. However, the patterns of some other costs and activities surrounding the part-time student experience do not bear this direct correlation with volume. This second aspect is covered in this section.

5.110. The costs of part-time students (on conventional undergraduate [UG] courses) have been established in a report on alternative modes of delivery[28]. This measured the costs of a PT student over and above the costs of an FT student. A TRAC-based fEC approach was taken in the costing model, so PT students were deemed to carry full costs. This meant, for example, that PT students 'infilling' to full-time courses were still attributed the same academic staff time (delivery etc) and indirect costs as FT students on that course. This follows the principle established in chapter 3.

5.111. The main findings of that study were that:

- there are additional costs associated with PT students
- these arise from administration, academic time (cohort sizes etc)
- there are different types of additional costs over an FTE:
    - some additional costs arise on an FTE basis
    - some on a person (headcount) basis
    - and for some cost elements the costs incurred for an FT student are at the same level as those incurred for a PT student
- additional costs fall relative to FT funding, as the FTE rises, e.g. additional costs of an 0.4FTE student are higher (in terms of relative addition to FTE0.4 funding) than an 0.7FTE student (in terms of FTE0.7 funding).

5.112. The results appear to reflect the views of institutions that the costs of a PT student are significantly higher than the costs of an FT student.

5.113. There were a number of issues with the costing method used in this study:

a. The information was very difficult to establish. No institution had evidence already available, so the costs had to be built up through discussion and assumptions. This required academics, and managers of central service departments, to think in different ways about the impact of a PT student. It also relied on statements such as 'administrative effort is double that required for an FT student', which required assumptions to be made about the level and cost of administrative support required for an FT student. This was informed by previous costing studies carried out by the consultants, but was

[28] 2003, see footnote 6, page 24.

not part of a new data collection exercise linked specifically to this study.

b. It did not include any extra costs arising from a higher level of non-completion amongst PT students, although the consultants were told by institutions that this arises. There was no evidence that could be drawn upon.

c. The costs would vary by type of student – in particular WP and mature students perhaps on postgraduate (PG) courses – which was not studied. The study did identify a possible double-counting of administrative and other costs of part-time provision with those arising from WP students or complex provision such as foundation degrees and work-place learning;

d. The study costed students who were taught within the normal academic day – it did not quantify the additional costs that arise from evening/local provision (although it recognised that some might be incurred); nor any additional costs that might arise from provision during vacations. (A 24-hour campus has major investment implications, requiring increased access to libraries, computing facilities and research buildings. However, it could also lead to innovative working practices, leading to increased value for money.)

e. It did not cover all types of provision[29] – it only covered the costs of students who were generally taught alongside or in parallel with FT students on similar courses. As such it would not have covered HEFCE-fundable students on continuing professional education courses – whether sub-degree/degree or PG; or taster or access provision (short preparatory or access courses to facilitate progress on to an initial HE qualification) where it is an integral part of an HE course. The study could not identify what proportion of students fall within these categories of provision. However a study recently commissioned by Universities UK in this area may be able to do this.

5.114. Universities UK has just commissioned a consultancy study that, amongst other aims, is to establish the costs of PT students. We understand that that study (still in its early stages) is likely to use as a base the costing method developed in the alternative modes of delivery report, but will develop this to explore costs of different types of PT student, for example.

5.115. The costing method used in the alternative modes of delivery study contained the following techniques:[30]

a. Academics (lecturers and heads of department) and heads of central service departments considered, through a structured discussion with a consultant, the additional time or cost incurred for part-time provision.

[29] We understand that some potential PT candidates are not defined as such in HESA so a part-time provision costing model should not anyway include them, such as catch-up vacation courses (currently covered under the long course premium, rather than the PT premium); foundation degree bridging courses (counted within HESES as a separate year of programme of study and returned as part-time with an FTE of 0.3); and access courses that are not credit-award-bearing (included as part of outreach, within the WP cost model).

[30] Only a brief description is provided, more detail is available in the 2003 study report.

b. A list of cost drivers and areas where additional costs are incurred was drawn up as a result of these discussions – e.g. recruitment (non-UCAS costs, interviewing and advice on application), student administration (student records, tracking, fees collection, communication), time/place of study (e.g. cohort size, evening/weekend, off-campus), nature of the student (study skills, pastoral support), and non-completion.

c. In each area, the additional costs were classified as: those not incurred for an FT student at all (and, within this, incurred for PT students on a headcount or FTE basis); or those incurred by an FT student but at a similar level to those required for a PT student.

d. The costs incurred only for PT students were established either through an estimate (often very broad) from the academic; those incurred for both PT and FT were established with reference to a standard average cost of an FT student drawn up by the consultants' experience of previous costing studies.

e. The additional costs were then shown for students studying for various periods within a year (i.e. different FTEs); and (broadly) as a percentage of the current HEFCE price for group D.

A costing study for HEFCE has established useful information on the additional costs of part-time students, and a Universities UK study may lead to a development of the costing model and improvement in the sophistication of its findings later this year. However, establishing costs in this area is complex.

The additional costs of part-time students, and the TFM

5.116. It is important to reflect on the primary need for the cost information in this area – to inform the TFM. It is unlikely that HEFCE would wish to incorporate further granularity into the TFM and therefore it is unlikely to wish to identify each type of PT student – maturity, level of course, type of course – separately for funding purposes.

5.117. We do not think that the use of a credit framework by the sector would mean that the additional costs of part-time students are no longer incurred, or remove the capability to recognise these costs in the funding model. Any student with less than an FT credit load (as now) could still be recognised and funded at a premium. This might make it possible for differential premiums to be applied to different FTE loads.

5.118. Having said that, it would be possible to take account of the extra costs of PT students by premium funding on a headcount basis (rather than as a percentage of their FTE) - which might better reflect some aspects of their cost structure.

5.119. Obviously, if a credit framework was used to inform the TFM, and completion was redefined (accumulation of learning), the numbers of PT students would rise. Costs incurred by those registering as PT, and those

who originally registered for full-time study but became part-time in the course of the year, would be different.

Treatment within the consistent national framework

5.120. We have said that the discipline cost model should exclude the additional costs of part-time students. As with non-traditional courses (considered through the course cost model) the main options are:

a. To leave the costs in as they are not material (we note that the PT premium comprised just 1.4 per cent of the assumed FTE student count in the 2005-06 calculation of the standard resource).[31] However, some disciplines, such as medicine, would have fewer PT students than others so the additional costs would not be borne equally across all disciplines.

or, to remove the additional costs of PT provision from discipline costs by:

b. Using the premium as a proxy.

c. Identifying how much of their provision is higher or lower cost – and to apply say two (suggested) notional costs to the relevant student numbers.

d. Institutions costing this provision themselves, either annually, or periodically.

5.121. Our conclusion here is the same as for the course cost model – that the third option (c) appears the most desirable because:

- institutions would gain a better understanding of their costs
- underfunding model B, when exceptional variations may be funded outside a 'threshold range' of provision, this may give useful information on the range of exceptions.

We propose that the costs are removed from the discipline costing model by institutions applying one of a number of alternative notional costs to the relevant student numbers, selected to reflect higher or lower cost provision.

5.122. The selected range of costs would be established through a part-time costing model, as follows.

[31] Table D, www.hefce.ac.uk/finance/fundinghe/hefcegrant/granttables.xls

A part-time costing model

5.123. The main options for a part-time costing model are to :

i. assume the costs established through the 2003 study are appropriate and adequate

ii. use updated costs established through the Universities UK study

iii. build on the work of these two studies to ensure that they

- cover other types of PT provision
- use a typography of different types of PT student
- avoid any double-counting of costs with the WP costing model, or the alternative modes of delivery model (evening provision)
- better identify and consider the costs of any higher non-completion rate
- consider to what extent costs of PT provision differ at an institutional level because of the size of the PT population in the total. (Are costs in institutions with significant PT student numbers the same per PT student at other institutions?). This could inform the TFM if funding outside the threshold range of PT provision.

  If the results of the two studies were very different, then this may also require a further extended study with a larger sample, or a clarification of definitions and methods that are most appropriate
- if credit frameworks are to be used, consider the different cost structures for PT students originally registered as PT, and PT students originally registered as FT.

iv. develop a new costing model.

5.124. Only the last three options really allow two or more notional costs to be presented to the sector for use in their consistent national framework.

5.125. We also note that PT provision comprises 40 per cent of student population (headcount, HESA 2003-04 so still including PGR students), and the majority of students in many institutions. This is of significance to the sector, and the costing models should facilitate HEFCE and institutional understanding of the costs being incurred, irrespective of their treatment in the TFM.

We propose that option (iii) is adopted, which would draw upon the results of the 2003 HEFCE study and the Universities UK study underway and develop this as necessary. One of the outputs of this would be two or more notional costs that would form part of a tool that allowed the sector (fairly easily) to cost part-time provision in the consistent national framework.

5.126. As part of this, an additional analysis could be undertaken to review any discounted costs of long courses (which are likely to arise from the same factors as those in part-time courses – i.e. the fixed nature of indirect costs).

Cost model 5: High-cost base

5.127. The fifth cost model could cover costs incurred through institutional factors that are (broadly) considered to be outside the direct control of the institution: old and historic buildings, London weightings, small institution costs[32] (diseconomies of scale), etc.

5.128. These costs would only be applicable to specific groups of institutions. For robust cost data, studies of a sample of each group of affected institutions would be required.

5.129. HEFCE may not wish to inform the TFM by updated costs (for example, London weightings may or may not be adequate, but further cost data in this area may not automatically lead to changes in the TFM). These studies would be burdensome to carry out, and there may be little point, unless the sector desired it, for this work to be done.

5.130. In some cases the cost data may be of wider interest (for example, shedding light on the main reasons for small institutions to be higher cost, and what the cost impact of this is) – if previous cost studies have not been carried out or have not been considered robust enough. But all of these studies would involve a burden on institutions.

5.131. Within the national costing framework, the main alternatives for these areas of higher cost are:

1. Don't cost, and use the existing premium as proxy for cost when arriving at the 'residue' discipline costs.

2. Rely on existing cost information (e.g. on London weightings, old and historic buildings) and the affected relevant institutions use this as part of the national consistent framework.

3. Carry out a survey to establish/update the cost information (which could be used to inform the TFM) – then, in the national consistent framework:
    a. each institution reflects its own costs

    or

    b. each institution reflects the average cost.

[32] Defined by HEFCE as those with 1,000 FTEs or fewer, and who often carry disproportionately high central and administrative costs.

Cost model 6. Specific initiatives

5.132. This area describes one-off initiatives affecting only some institutions, lasting a few years. Some of these initiatives would cover academic activities such as:

- CETLs
- innovation/strategic developments/restructuring
- establishing a new medical school
- development of foundation degrees
- Aimhigher
- Lifelong Learning Networks;
- centres for strategically important and vulnerable subjects.

5.133. Other initiatives cover capital or long-running facilities – such as copyright libraries – that cover many institutions. The amount of investment needed in an institution can inform the level of funding (but would rarely drive it) – this funding can be formulaic (e.g. project capital) or significantly rationed (requiring institutions to identify other forms of funding as well).

5.134. They are generally forward-looking (so there are no historical costs) and cover a discrete and time-limited project or activity. The method would use forecast costs, not actuals.

5.135. There is a need for a costing method so that costs can be submitted to HEFCE (in order to compare bids or understand totality of funding need), however, this would not necessarily inform the level of funding. It is good practice for institutions to really understand the full costs of the initiatives that they are planning.

Cost models (for academic activities)

5.136. A standard cost model for specific initiatives could be drawn up for institutions to use as they wish. All institutions have models, but these are not all likely to follow good practice, and we are aware that there has been confusion over the treatment of indirect/estates costs.

5.137. A cost model might include the following features:

- it would include whole life costs (development/capital) as well as recurrent costs. It would specifically prompt those preparing costs to consider non-standard costs such as partnerships

- indexation would be properly accounted for (institutions have found difficulties with this in TRAC fEC, implying their current models are not adequate)

- it would cover all costs, irrespective of funding, and focus on the wider business case as well as just forming a bid for funds from one sponsor

- when costing academic activities, indirect costs would be established using either an incremental approach (for very large initiatives) or an fEC approach.

5.138. The incremental approach would involve institutions establishing how many staff or how much additional resources would be needed in central services departments (and in faculties) to cope with this significant new venture.

5.139. The fEC approach would be used for smaller projects where it is much more difficult to foresee the impact of one project or venture on central services department costs (and local faculty or department costs). This approach would use the indirect cost rates established in the discipline cost model – discounted where appropriate to reflect the indirect nature of many of the funded direct costs.

5.140. Where the initiative was for a capital item or facility, indirect costs and estates costs would be established (if material) using the incremental approach.

Treatment in a national consistent framework

5.141. In the national consistent framework the costs of strategic initiatives should ideally be excluded from the institutional costs to arrive at discipline costs (see Figure 2, page 9). The main options are:

a. Ignore these initiatives (so the costs would be left in the discipline costs). This would be simplest and would be appropriate where they are not significant in size and affect all disciplines to broadly the same extent. This might also be appropriate for capital funding.

Or, identify these costs separately as either the:

b. Original bid costs – recurrent items or depreciated capital items (but not amortised development costs as in reality these are written off when incurred).

c. Actual costs identified through a separate costing exercise, undertaken by each institution. In effect this would be asking them to maintain project cost records. This may be appropriate for very large initiatives (such as a new dental school).

5.142. The first is of course the least burdensome. The choice of these would depend upon the significance and type of initiative.

List of abbreviations

CETL	Centres for Excellence in Teaching and Learning
FE	Further education
FEC	Further education college
fEC	Full economic costs
FT	Full-time
FTE	Full-time equivalent
HE	Higher education
HEFCE	Higher Education Funding Council for England
HEI	Higher education institution
HESA	Higher Education Statistics Agency
NPFT	Non-publicly funded teaching
OFFA	Office for Fair Access
PFT	Publicly funded teaching
PGR	Postgraduate research
PT	Part-time
TFM	Teaching funding method
TRAC	Transparent Approach to Costing
WP	Widening participation