



**An Roinn Caiteachais
Phoiblí agus Athchóirithe**
Department of Public
Expenditure and Reform

Spending Review 2018

Understanding the Funding Needs in Higher Education

EDUCATION AND SKILLS VOTE

JULY 2018



This paper has been prepared by staff in the Department of Public Expenditure & Reform. The views presented in this paper do not represent the official views of the Minister for Public Expenditure and Reform.

Core Findings

1. More granular data to understand the efficient cost of delivering Higher Education

The Report of the Expert Group on Future funding needs for Higher Education opened up an important debate regarding possible policy options to meet future funding pressures in the sector. By their nature, projecting future costs are highly sensitive to different assumptions and parameters. Given Ireland's population structure, with the highest proportion of children in the population of the EU-28, demand for third level places is expected to continue to increase until 2029. It is important that any assessment of potential funding pressures arising from these demographic projections is based on a robust interrogation of granular data to ensure a clear understanding of the efficient cost of delivering a quality education and is reflective of the diversity of the sector. In order to accurately estimate the future funding needs of the sector, analysis must move beyond using aggregated average costs as a basis for funding and towards using specific field of education costings.

2. Student Staff Ratio

The Expert Group Report targeted a student staff ratio of 14:1 projecting a funding need of €600m by 2021 and €1bn by 2030. While student staff ratio is a widely used international benchmark for educational quality, there are limitations with using such a ratio, across a diverse sector, as a basis for estimating funding needs. Improvements in the collection and availability of data in the sector lends itself to the development of more evidence based, system wide, outcome-focused indicators for quality of education. The Department of Education and Skills has committed to initiating a review of quality in higher education in mid-2018, this provides the opportunity to utilise student surveys results data, graduate outcomes and employment data in order to provide greater insights into the performance of higher education institutes in Ireland and better inform funding decisions.

3. Student demand including demographics and international students

With regard to demographic projections, latest DES projections and assumptions (November 2015) understate the number of non-EU students and overestimate the amount of mature students entering undergraduate study. While non-EU and post graduate students are included in DES aggregate demand projections, future funding costings do not currently take account of the fee income generated from these cohorts. In order to understand the funding needs of the sector, it is important that demand projections are disaggregated to show non-EU students and post-graduate students - to allow these income streams to be captured and clearly identified in a new funding model.

4. Non-Exchequer Resources

It is important that all resources, Exchequer and non-Exchequer, are comprehensively recorded to ensure resources are targeted in the most effective and efficient manner. One of the restrictions in undertaking analysis in the HE area is the lack of data on own resource funded activities, in this instance data on the number of non-Exchequer funded teaching posts was limited. The implementation of the recent funding model review provides the opportunity to ensure there is greater transparency, in particular with respect to non-Exchequer resources.

5. Meeting skills needs of the economy

Central to our future economic well-being is to have an appropriately educated workforce that meet the skills needs of the economy. Research by the ESRI and EU CEDEOP (European Centre for the Development of Vocational Training) shows a high degree of skill underutilisation among Irish employees with the percentage of Irish workers reporting education or skill levels in excess of those required to do their job - the third and fourth highest respectively of 28 EU countries. Over-skilled workers with a higher academic degree tend to have the highest persistence of mismatch, with over education having potentially adverse impacts for individuals, firms and the economy. This underscores the need for a shared strategic vision for both the higher education and further education and training sectors with clear, supported progression pathways.

1. Introduction and Context

1.1 Introduction

Ireland's human capital is recognised as one of its core economic strengths and is a key enabler of the nation's future development. It is also of vital importance that we have an educated workforce that can adapt and respond to the challenges that Brexit poses to the economy. Studies repeatedly show that higher education has a key role to play in enriching and strengthening the economy and local communities, underpinning the civic, cultural, and social cornerstones of society.

In July 2016 the Report of the Expert Group on Future Funding for Higher Education called *"Investing in National Ambition: A Strategy for Funding Higher Education"* was published. The Expert Group Report outlined the future funding needs of the Higher Education (HE) sector and concluded that €600m was required by 2021 and €1bn by 2030. The report also outlined three potential funding options for funding Higher Education in Ireland into the future.

The purpose of this paper is to gain a better understanding of those variables and technical assumptions which underpin the headline funding figures identified as being the future funding needs of the Sector. This is timely given the fact that the Government has commenced a process of reinvestment in higher education. It is important to emphasise that this paper does not explore the alternative policy options on how the system could be funded, nor is it a critique of the Expert Group Report.

1.2 Methodology

The methodological focus of this paper is a desk based analysis reviewing the variables and parameters used in the 2016 Expert Group Report. This analysis was supported by meetings with relevant sections in the Department of Education and Skills (DES) and the Higher Education Authority (HEA), who provided data as well as additional insight and expertise into the different aspects of the HE system and landscape. Data has been sourced predominantly from official sources including DPER, DES, HEA, CSO and OECD.

1.3 Quality Assurance (QA)

Quality assurance refers to the concepts of:

- Accuracy of the data and other information supplied, and
- Rigour applied in using analytical techniques and integrity in reporting.

As part of the quality assurance process feedback was sought on the analysis format (structure), clarity (quality of writing), accuracy (reliability of data), robustness (methodological rigour), and consistency (between evidence and conclusions). Further detail on the quality assurance process undertaken is set out in Appendix 1. It is important to note that involvement in the QA process does not infer agreement with the findings of the analysis.

1.4 Structure of the Paper

The analysis in this paper was carried out as part of the 2018 Spending Review to inform and provide an evidence base for decisions taken as part of Budget 2019. The purpose of the paper is to gain a better understanding of the variables and technical assumptions which underpin the headline funding figures identified as being the future needs of the Sector and setting out recent developments. The paper is structured as follows:

- Section 2 gives an overview of the HE sector in Ireland including a summary of funding and other relevant developments in the Sector;
- Section 3 reviews Department of Education and Skills demand projections and assumptions;
- Section 4 examines student to staff ratio and academic to support staff ratio parameters used in the Expert Group Report;
- Section 5 reviews pay and salary assumptions and recent developments;
- Section 6 outlines wider policy considerations; and
- Section 7 presents findings and makes recommendations.

2. Overview and Recent Policy Developments

The purpose of this Section is to present an overview and set out recent policy developments in the Higher Education Sector.

2.1 Overview of Higher Education in Ireland

2.1.1 Institutions

While there are more than 40 higher education institutions (HEIs) in Ireland, the focus of the funding system is on the 24, contained in table 1, that receive a core funding contribution from the HEA – of which 7 are Universities, 14 are Institutes of Technology and 3 are specialist higher education colleges (two focused on teacher education and one on art and design). These 24 are typically referred to as the public HEIs. It should be noted that the proposed introduction of Technological Universities from 2018 onwards will have a significant impact on the number and size of a number of institutes.

It is also important to note that other institutions, with both private and not for profit status, access some public funding from the HEA for specific courses (e.g. medicine, pharmacy), by winning competitive calls (e.g. to run skills courses through the Springboard programme), or via DES in recognition of a particular remit.

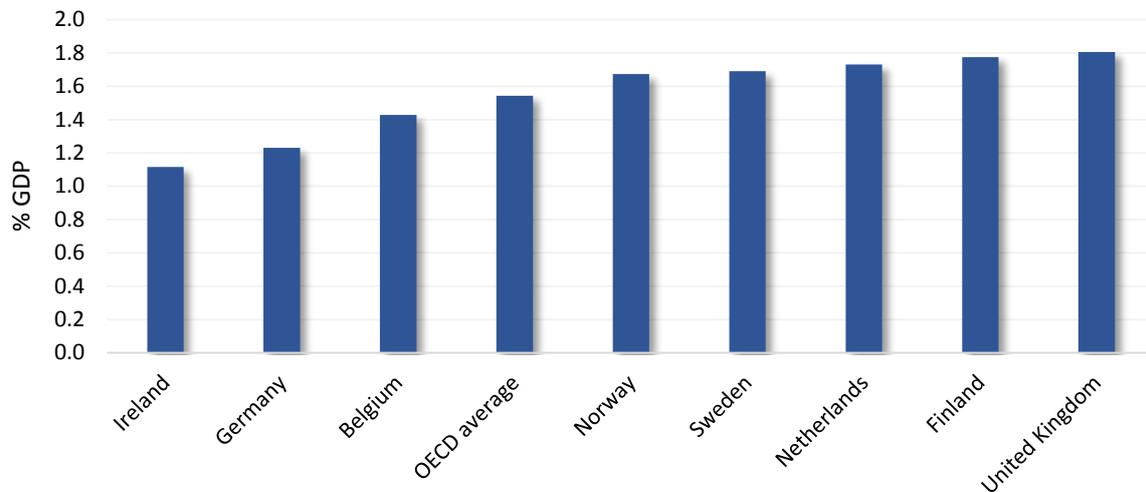
Table 1: Core-funded Higher Education Institutions

Universities	Institutes of Technology		Colleges
Dublin City University	Athlone Institute of Technology	Institute of Technology Carlow	Mary Immaculate College
Maynooth University	Cork Institute of Technology	Institute of Technology Sligo	National College of Art and Design
National University of Ireland, Galway	Dublin Institute of Technology	Institute of Technology Tralee	St Angela's College, Sligo
Trinity College Dublin	Dundalk Institute of Technology	Institute of Technology Tallaght	
University College Cork	Galway Mayo Institute of Technology	Letterkenny Institute of Technology	
University College Dublin	Institute of Art, Design and Technology	Limerick Institute of Technology	
University of Limerick	Institute of Technology Blanchardstown	Waterford Institute of Technology	

2.1.2 Expenditure

Expenditure on tertiary education in Ireland (including both public and private spending) was 1.2% of GDP in 2013 (below the OECD average of 1.6%). In 2015, expenditure represented 1.1% of GDP (OECD average of 1.5%). Overall, higher level funding decreased from 20% in 2008 to 17% of total education expenditure in 2017, reflecting fiscal consolidation over the period and the prioritisation of primary and post primary sectors in education. Figure 2.1 compares Ireland's expenditure on tertiary level education as a percentage of GDP with comparator countries in the OECD.

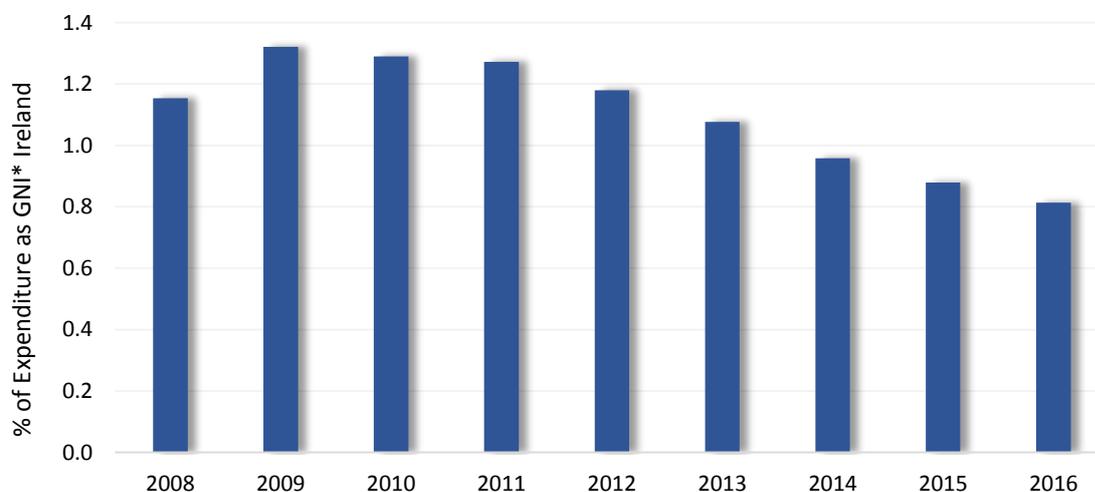
Figure 2.1 Higher Education Expenditure as a Percentage of GDP, 2015



Source: OECD Education at a Glance, 2017

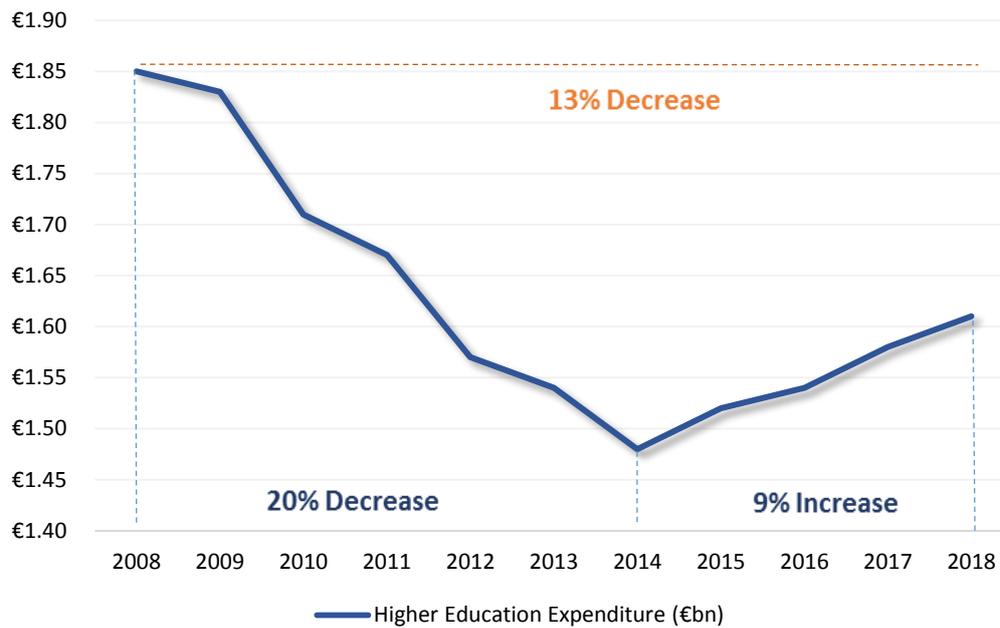
Because of the open nature of Ireland’s economy and high concentration of multi-national companies (MNCs), using GDP as a comparator across countries can yield some distorted results. The CSO introduced a new indicator, GNI*, to counteract this potential distortion in GDP. Modified GNI (or GNI*) is defined as GNI less the effects of the profits of re-domiciled companies and the depreciation of intellectual property products and aircraft leasing companies (CSO, 2017). Figure 2.2 examines higher education expenditure as a percentage of GNI* for Ireland. Since 2008 the level of higher education expenditure relative to GNI* has decreased from 1.2% to 0.8%.

Figure 2.2 Higher Level Education Expenditure as a Percentage of GNI*



Source: Central Statistics Office and Department of Public Expenditure and Reform

Figure 2.3 Higher Education Expenditure 2008 – 2018 (€bn)



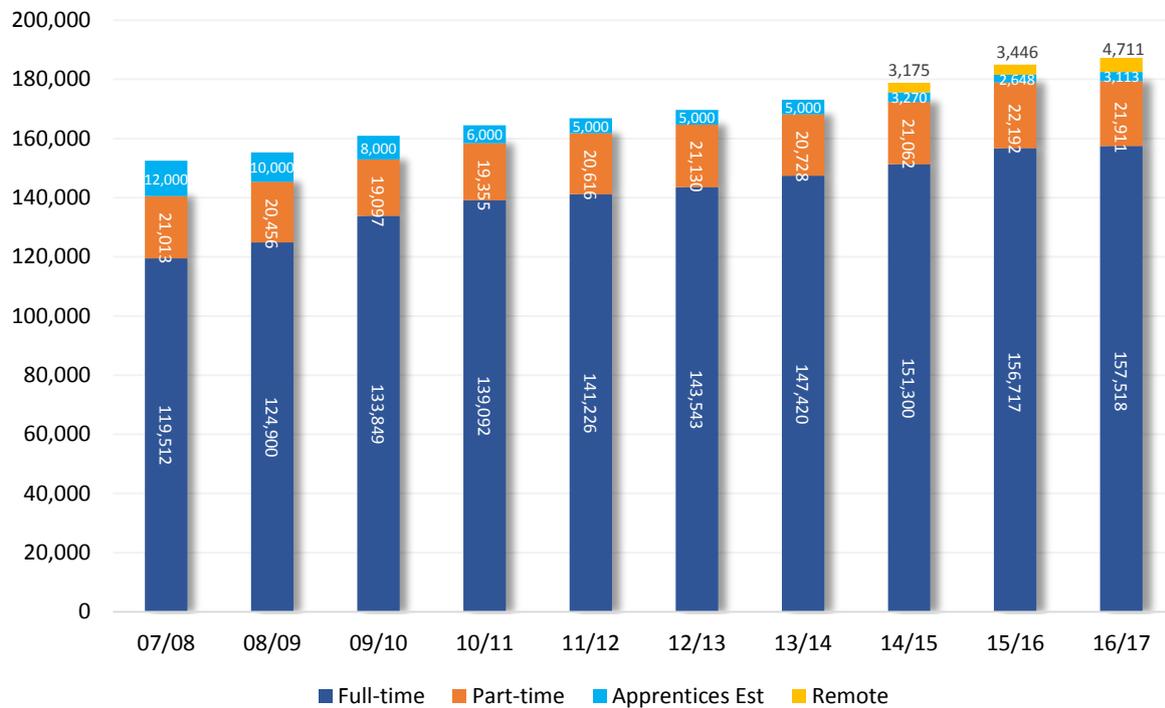
Source: Department of Public Expenditure and Reform

Fig 2.3 outlines higher education expenditure from 2008 to 2018¹. Overall, expenditure decreased by 13% from 2008 to 2018 with an average yearly decrease of 1.3%. However this period can be split in two. Pre 2014 there was a 20% decrease in expenditure with 2014 being the lowest in the period with an average yearly decrease of 3.6%. The years following 2014 has seen an average yearly increase of 2.1% with growth since 2014 reaching 9%. This trend shows that while initially there was lower expenditure in the past number of years, investment in the HE sector has steadily increased in recent years.

¹ 2018 REV Estimates, Department of Public Expenditure and Reform

2.1.3 Student Numbers

Figure 2.4 Undergraduate Students 2007 - 2016



Source: Department of Education and Skills

The above graph outlines the number of undergraduate students in third level from 2007 to 2016. The graph shows that:

- Full time undergraduate students increased by 32% from 2007 to 2016 with an average increase of 3% over the period;
- Part time students marginally increased by 4% over the period;
- Apprenticeship figures² demonstrated the most dramatic change with an estimated 74% decrease in the number of students studying apprenticeships with an average yearly decrease of 13%.
- Trend data for remote learning is limited to the last three years and indicates a 48% increase from 2014 to 2016.

² This relates to apprenticeships in a HE setting only.

Figure 2.5 Postgraduate Students 2007 – 2016



Source: Department of Education and Skills

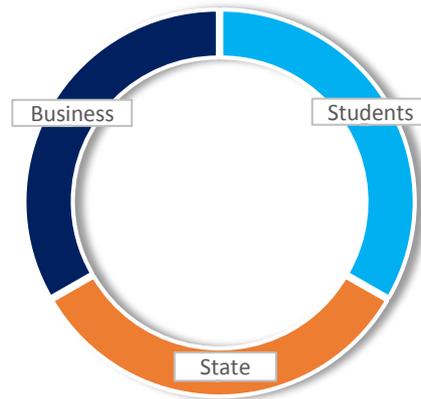
The above graph outlines the stock of postgraduate students from 2007 to 2016. Overall, the graph shows that:

- Full time students grew by 23% over the period with an average yearly growth rate of 2%;
- Part time postgraduate students grew significantly by 43% over the period with an average yearly growth rate of 4%;
- The three year data available for remote learning shows an increase of 28% from 2014 to 2016.

In the decade to 2017, the student staff ratio increased from 16:1 to 20:1 due to a combination of increased student numbers and a reduction in staff numbers.

2.2 Expert Group on Future Funding for Higher Education

The Expert Group on Future Funding for Higher Education report, *“Investing in National Ambition: A Strategy for Funding Higher Education³”*, established that higher education makes a hugely positive contribution to the development of individuals, employers, society and the State. There are three main stakeholders that gain the rewards from higher education - business, students and the State.



The Expert Group Report concluded that the current approach to funding is unsustainable, and that substantial increases in investment in higher education are required to ensure that the sector can remain viable and provide the capacity to meet the major increase in student demand projected through to 2030.

The Expert Group estimated that the HE sector alone requires an increased annual investment of €600 million by 2021 and €1 billion by 2030. These estimates were based on meeting increased demographic demand and reducing the student/staff ratio in Higher Education from the then ratio of 20:1 to 14:1 by 2021.

The Report opened up an important debate in Ireland on how our HE system should be funded and provided an overview of the potential scale of the funding issues for the sector based on a student / staff ratio. There are limitations with using a student / staff ratio based approach across a very diverse sector, however it is acknowledged that system wide common cost data in the area is limited and restricts the use of some alternative approaches.

³ <https://www.education.ie/en/Publications/Policy-Reports/Investing-in-National-Ambition-A-Strategy-for-Funding-Higher-Education.pdf>

2.3 Current Staffing Policy in the HE Sector

While pupil teacher ratios are a feature of Government policy in the Primary and Post-Primary Sectors, it is important to note there is no similar ratio based policy in place in the Higher Education Sector. Government policy on staffing in the Higher Education sector is currently centred on an Employment Control Framework (ECF) which were initially introduced across the Public Service in 2009 as a policy response to the emerging fiscal crisis. While Government policy on ECFs has been replaced with delegated sanction arrangements for much of the public service since 2015, an ECF remains in place for the Higher Education sector.

The ECF for the Higher Education Sector, which has been updated on several occasions since its introduction to accommodate increased student numbers, provides institutions with considerable flexibility to fill vacancies, through recruitment or promotions on the basis of meeting an overall ceiling of posts. It is also important to bear in mind that the ceilings do not apply to non-Exchequer, own resource funded posts in the sector.

2.4 Funding Developments

2.4.1 Increased funding for higher education

In Budget 2017 additional funding of €36.5 million was secured for the HE sector with a further €60m provided in Budget 2018 for investment in higher education. This additional funding provided for targeted initiatives in higher education including skills programmes, performance and innovation funding, Technological University development and apprenticeship costs in the sector. It also allowed for places to be provided for 2,100 additional students in 2018. In total, €100m more was invested in Higher and Further Education in 2018 than was invested in 2016, prior to the publication of the Expert Group Report.

2.4.2 Increase in National Training Fund Levy

In Budget 2017, the Minister for Public Expenditure and Reform announced a consultation exercise to consider an Employer-Exchequer Investment Mechanism. This reflected the recommendation of the Expert Group Report that a structured contribution from employers, as major beneficiaries of the sector, should form a core element of future funding requirements.

As part of Budget 2018, the Minister for Public Expenditure and Reform announced that the rate of the National Training Fund levy (NTF) would be increased by 0.1 per cent in 2018 to 0.8 per cent. This measure provided c. €47.5m of additional investment in 2018 for higher education and further education and training. The levy will rise to 0.9 per cent in 2019 and to 1.0 per cent in 2020 subject to the implementation of the necessary reforms to ensure that employers have a greater role in determining the priorities and the strategic direction of the Fund.

In parallel and as part of the ongoing reform of the NTF by the Department of Education and Skills there was a reallocation of several programmes between the Exchequer and the NTF, as set out in the National Training Fund Expenditure Report 2018⁴, in order to ensure it is more closely aligned and responsive to the needs of the economy and employers.

2.4.3 Exchequer Capital Investment

Following the outcome of the review of the Capital Plan in 2017, an additional €663 million, in addition to the existing allocation of circa. €3 billion, was provided for the Education Sector for 2018-2021. The need for capital investment in the Higher Education and FET sectors was highlighted in the IGEEES Capacity and Demand analysis (2017) which informed the 2017 Capital Review process. €331 million of the additional Exchequer investment announced in the Capital Review was prioritised for the Higher Education, FET and research activities out to 2021.

The funding will deliver a new programme of both renewal and new-build projects focusing on expanding capacity and improving quality in areas of key skills needs. In addition, investment in new infrastructure for the IoT sector via a PPP programme was announced by the Minister for Education and Skills in October 2017.

Most recently in February 2018, the 10 year National Development Plan set out an additional €2.2 billion in Exchequer funding out to 2027 to support infrastructure priorities in the higher education sector including the development of Technological Universities.

⁴ <https://www.education.ie/en/Publications/Education-Reports/national-training-fund-expenditure-report-2018.pdf>

2.5 Other developments

2.5.1 Current Funding Model

The current funding allocation model for HEIs in Ireland comprises three elements 1) the block grant 2) Directed Top-Slice Allocations and 3) a performance based component.

Block Grant

The block grant itself comprises of two components. The first is the recurrent grant allocation model (RGAM). The RGAM is allocated through a funding model. The formula used for allocation is driven by prior-year retained student numbers (excludes non-EU students). These numbers are weighted for the relative costs of providing education across different disciplines⁵. The block grant also provides research supports and support aimed at promoting access and participation in higher education.

The second component of the block grant is the free fees grant. The free fees grant is based on certified student numbers in each undergraduate programme which is then multiplied by the fee for the programme. The student contribution of €3,000 is subtracted from the fee due to the HEI as part of the free fees grant allocation from the HEA.

Overall, available funding is split on a fixed 60/40 proportion between two funding pots: one for universities and colleges, and one for Institutes of Technology.

Directed Top-Slice Allocation

From time to time, ring-fenced allocations for specific strategic or important purposes are top-sliced from the overall grant by either the DES or the HEA. This form of funding is generally used to steer rapidly required systemic change, tackle issues better addressed on a collective or sector manner, or handle urgent ad-hoc requirements.

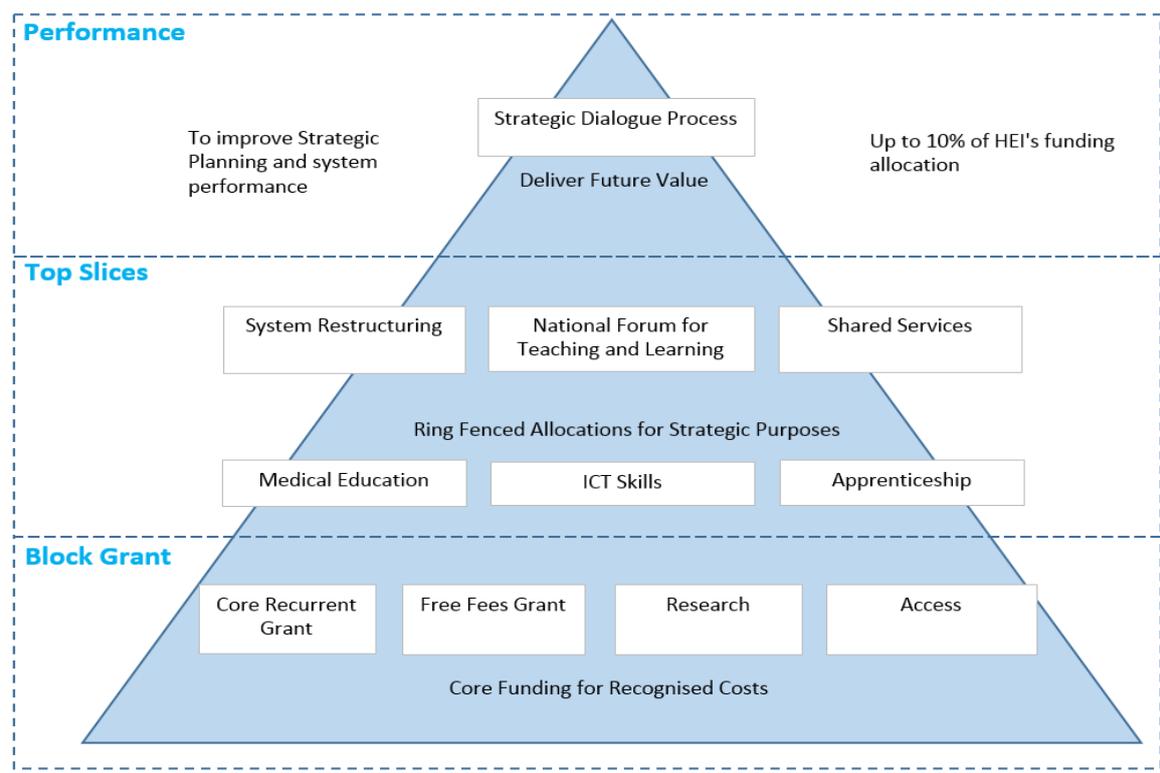
Performance Based Funding Component

Each institution must agree a three year mission-based compact with the HEA. These compacts between the institution in question and the HEA identify proposed targets across

⁵ For example, lab based disciplines are weighted higher than non-lab disciplines.

defined Ministerial system objectives. Each year an external expert panel reviews the HEIs performance against the compacts based on annual progress reports. Since 2013, there is provision for withholding up to 10% of the allocated institution block grant for a particular year, on the basis of verified performance against the agreed targets in the preceding year. However this process has yet to apply a penalty on any institution deemed to be performing inadequately as a result of this panel review⁶.

Table 2: Overview of the Components of the HEA Recurrent Funding Model



Source: Higher Education Authority

2.5.2 Review of the Allocation Model for Funding Higher Education Institutions

A Review of the Allocation Model⁷, led by an independent Expert Panel, commenced in 2016. The key recommendations of the Review Group are set out in Box 1 below. The Review found

⁶ According to the HEA, in 2016 2% of funding was withheld from 3 institutions pending delivery of an acceptable programme of remedial actions, although this was subsequently released following satisfactory responses.

⁷ <http://hea.ie/assets/uploads/2017/06/HEA-RFAM-Final-Interim-Report-062017.pdf>

that the existing method of calculating cost lacks a consistent and coherent method in reflecting the cost per student across field of education (FOE) and type of institution.

In order to establish a more robust future funding model data must be disaggregated amongst institutions and FOE. This would allow for a more accurate assessment of the efficient cost of provision across the higher education sector. In line with the recommendations set out in Box 1, more granular data on the efficient cost of provision than is possible at present would help to inform future policy decisions around funding. Measuring efficient cost would also allow analysis of economies of scale in the provision of higher education as well as facilitate an accurate assessment of the financial needs of the sector.

The approach within the Irish higher education sector for cost of provision comparisons between universities and IoTs is inconsistent. Some legacy issues exist, which include pension costs which are paid directly by universities (and partly funded via grant allocations) but which are outside the funding system for IoTs. There are also two different methodologies for calculating cost data supplied to the HEA:

- Universities use a Full Economic Costing (FEC) system that aims to capture the full costs of teaching, research and other activities by field to facilitate the sustainable management of institutions. This involves adjustments to reflect the cost of maintaining infrastructure and the cost of finance.
- IoTs use a unit-cost system driven by levels of funding which calculates an expenditure per student across academic programmes by removing non-recurrent costs. It does not provide for any contribution to pensions, nor does it account for any depreciation of an institute's assets (or cost of maintaining same).

It is worth noting that the view of the Funding Allocation Model Advisory Group are similar to the conclusions drawn in the Expert Group Report, namely that it is the clear view of the Expert Panel that increasing student numbers without increasing investment has the potential to impact on quality.

An analysis by Deloitte⁸ (2016) on the cost of delivering third level education in Australia highlights that *“As with any organisation, universities respond to incentives. Funding that is inconsistent with incentivising the efficient and effective provision of higher education risks distorting the decisions that universities make and increases the likelihood that these decisions fail to align with the nation’s economic and social interests. It is therefore crucial that funding appropriately relates to the cost of higher education provision such that the signals that funding sends – to both students and providers – positively influence decision making.”*

⁸ https://docs.education.gov.au/system/files/doc/other/deloitte_access_economics_-_cost_of_delivery_of_higher_education_-_final_report.pdf

Box 1: Relevant Recommendations from Review of the Allocation Model for Funding HEIs

Rec 1: An implementation plan for establishment of a fully universal system should be agreed when recommendation 7 has been fully embedded and there is greater clarity on the future institutional structure across the higher educational landscape

Rec 2: The current 'two pot' system should be replaced, in the interim, with a 'fluid two pot system', with the relative allocations to universities/colleges and IoTs adjusted annually to take account of relative changes in weighted WTE retained student numbers

Rec 3: The remaining specialist colleges should be fully integrated into the university funding model

Rec 4: The HEA should work with the Department of Education and Skills to facilitate a move towards a fully transparent cost-reflective weightings based allocation system applied to an agreed student and state income base reflecting the legacy based free fees element and existing RGAM allocations.

Rec 5: An adjustment should be made to annual RGAM allocations to apply full discipline-based weightings across the student contribution, free fees and RGAM allocations invested across the system. The appropriate treatment of postgraduate provision in this approach should be agreed by the HEA following further modelling and consultation with key system stakeholders.

Rec 6: The following approach to discipline-specific weightings is proposed:

- Subjects currently receiving additional funding (e.g. dentistry, vet science) in recognition of a significant gap between funding and costs are re-weighted to reflect this current contribution
- The HEA should review issues raised of inconsistency in the subject categorisation approach between universities and IoTs and make recommendations on appropriate categorisation moving forward
- Subjects that have been subject to an academic reform process (e.g. pharmacy, engineering, initial teacher education) to be assigned appropriate weightings following detailed reviews
- Other subjects (e.g. optometry, computer science) where a case has been made around inappropriate weightings to be dealt with via separate reviews to determine if re-weighting appropriate

Rec 7: A review should be undertaken to establish a consistent and comparable costing system and reporting requirements across all higher education institutions. The new costing system should be fully implemented for 2019/20.

Rec 9: The potential for agreeing a minimum standard unit of resource with the Minister for Education and Skills over the period of the system performance framework in line with the delivery of agreed objectives should be explored.

3. Student Demand including Demographics

This Section reviews the DES projections of demand for higher education and the assumptions underpinning them. For consistency the section focuses on the same student projections / assumptions used in the Expert Group Report. DES are currently updating the demographic projections and reviewing underlying assumptions with a view to publishing a new set of projections in 2018.

3.1 Student Demand including Demographics

The Expert Group analysis is based on the Department of Education and Skills third level demographic projections 2015-2029⁹. The analysis uses “S2” which is called a low growth scenario. This scenario applies the same transfer rate assumptions from secondary school as the baseline scenario (S1) but assumes growth of 25% for mature students over the period and growth of 25% for international students over the period. A full list of the assumptions is outlined in the table below.

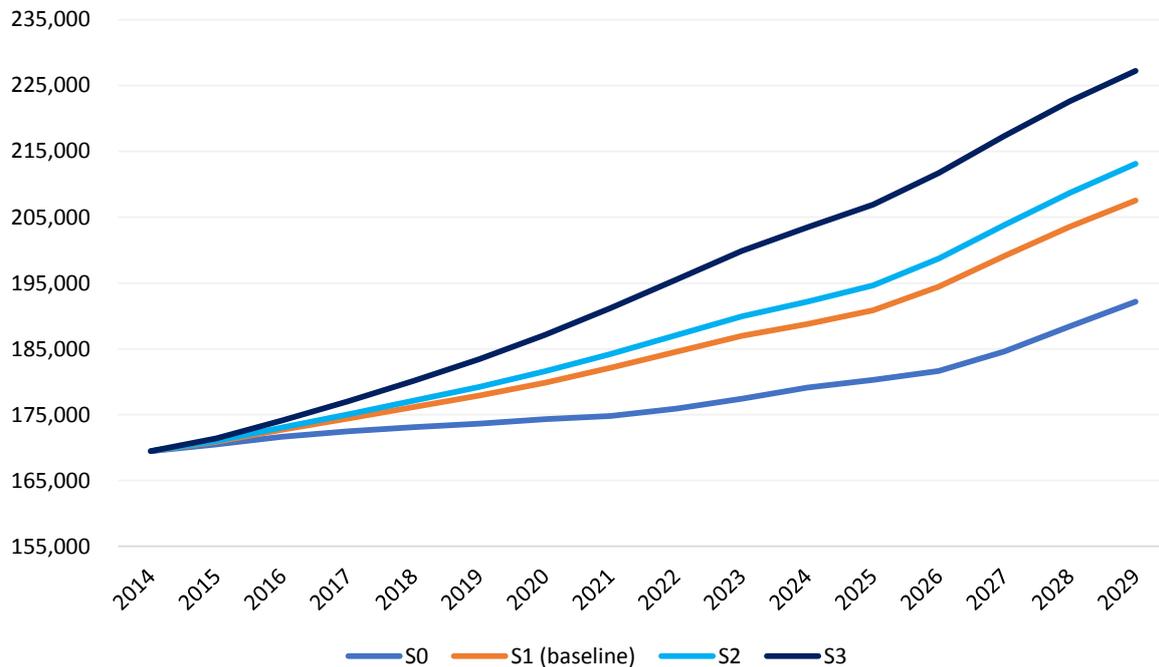
Table 4: Outline of Assumptions under DES projections

Scenario	S0	S1 (Baseline)	S2	S3
Transfer Rate from Second Level	Decreasing to 60%	2014/2015 levels (63.8%)	Remain at 63.8%	Increase to 70%
Mature Entrants	2014/2015 levels (5,300)	2014/2015 levels (5,300)	Increase of 25%	Increase to 70%
International Entrants	2014/2015 levels (1,700)	2014/2015 levels (1,700)	Increase of 25%	Increase to 70%

Source: Department of Education and Skills

⁹ <https://www.education.ie/en/Publications/Statistics/Statistical-Reports/Projections-of-demand-for-full-time-Third-Level-Education-2015-2029.pdf>

Fig 3.1: Department of Education Third Level Demographic Projections 2015 - 2029



Source: Department of Education and Skills

The above graph (figure 3.1) is an illustration of the Department of Education and Skills third level demographic projections. This data is based off full time students (headcount) i.e. the number of undergraduate full time students, postgraduate, international and mature rather than full time equivalents (FTE). The DES projections do not include part time students. The Expert Group Report was based on S2 assumptions that holds the transfer rate from second level constant at 63.8% over the period. Postgraduate enrolments were calculated as a proportion of undergraduate enrolments and based on trend data available from the Higher Education Authority. The projections also assume that mature entrants and international entrants grow by 25% each over the period 2015 - 2029 (further information on which is set out in Sections 3.2 and 3.4 below).

There are a number of drivers of enrolment projections. The existing student numbers at post primary level is the key driver of demand and is relatively straightforward to predict, while post-graduate, mature and part-time students are dependent on a number of factors

including wider labour market and economic conditions – and are, by their nature, therefore more difficult to forecast.

It is important to note that while part time learners are not included in the DES demographics projections, they are reflected in full time equivalent (FTE) enrolments which form the basis of the Expert Group Report.

Another recent development is the potential impact of Brexit on enrolment levels. While in-depth analysis of the issue is beyond the scope of this paper, it is clear that Brexit could potentially have a significant impact on enrolments in the Irish higher education system – from non-EU and EU students who want to study in the only native English speaking country remaining within the EU and from more Irish students choosing to stay in Ireland rather than studying in the UK.

3.2 Non-EU Students

HEA data shows that from 2009-2016 the number of full time non-EU students enrolling in Ireland has increased by some 200% (5,830 to 16,813)¹⁰. Therefore an assumption of a 25% increase in additional international students over a fifteen year horizon seems conservative when estimating the level of international students.

As part of their International Education strategy, DES have set a growth target of 33% in the Higher Education sector which would result in an increase in international students in both public and private HEIs with the aim to increase the output impact value from €819m in 2014/2015 to €1.15bn by 2019/2020.

Non-EU students pay fees which relate to the economic cost of course provision. It is therefore important that the fee income from this cohort of students is fully recognised in the funding model, in order to improve transparency and facilitate a greater understanding of the financial needs of the sector. In this regard, DES when publishing projections should fully disaggregate data to identify EU and non-EU students, which will facilitate a greater

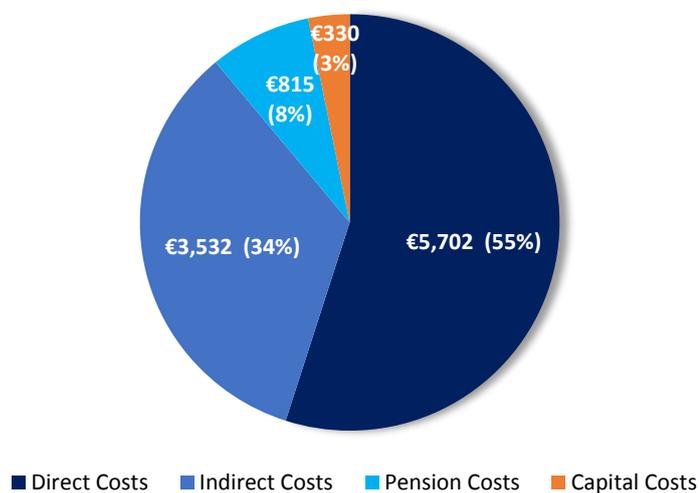
¹⁰ Based off enrolment figures from the HEA. <http://hea.ie/statistics-archive/>

understanding of both the funding needs of the sector but also the underlying demand from domestic students.

Available data from HEIs regarding the fees¹¹ charged to non-EU students (international students) shows that the average fee for studying in an IoT for a non-EU student in 2017/2018 is €10,652 and for a University it is €17,264¹². Latest data indicates a higher proportion of non-EU students study in Universities than IoTs¹³. The full time non-EU student population studying in Ireland yields additional revenue in the region of €260 million per annum (2016/2017) for institutions.

The Review of the Funding Allocation Model - Working Paper 6: Cost Drivers and the Costing System Underpinning Higher Education¹⁴ - outlines an average cost of provision per student of €10,379 across the higher education system in Ireland. This breakdown of the total cost per student is funded from several sources including state grants, student fees and other income.

Figure 3.2 Breakdown of average student cost (HEA)



Source: Higher Education Authority

¹¹ Medicine, dentistry and veterinary medicine are regarded as outliers in cost and are excluded from the average fee calculation.

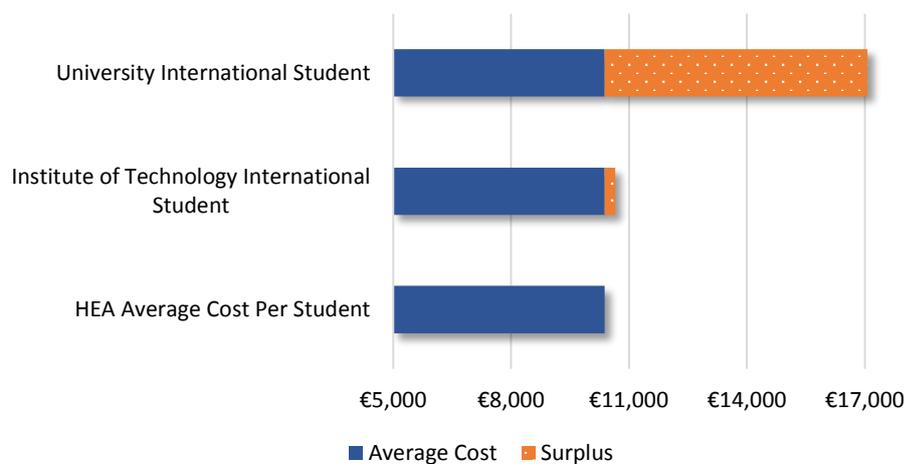
¹² Based off data from NUIG, UL, UCC, UCD and Trinity. DCU data unavailable.

¹³ Data based off the Higher Education Authority Key stats 2016/2017

¹⁴ <http://hea.ie/assets/uploads/2017/06/HEA-RFAM-Working-Paper-6-Costs-of-Higher-Education-Provision-06217.pdf>

Given that the average cost for a student to study in Ireland is estimated at €10,379 and the average fee¹⁵ for a non-EU student to study here in 2017/2018 is €10,652 in an IoT and €17,264 in a University, it is reasonable to assume that there is an element of cross subsidisation in the University sector. It is acknowledged that there are additional overhead costs associated with promoting, recruiting and retaining international students which are not reflected in the table.

Figure 3.3: HEA Average Cost and Potential Cross subsidisation Excess



Source: Higher Education Authority and Universities

Figure 3.3 compares the average cost per non-EU student in IoT and University settings and compares that with the HEA average cost per student outlined above. The IoT non-EU student cost average and the HEA average cost show little variation. However, there is a considerable variation (€6,685) for university non-EU student costs and the HEA average cost of provision. It must be borne in mind that this is based on average cost and average fees.

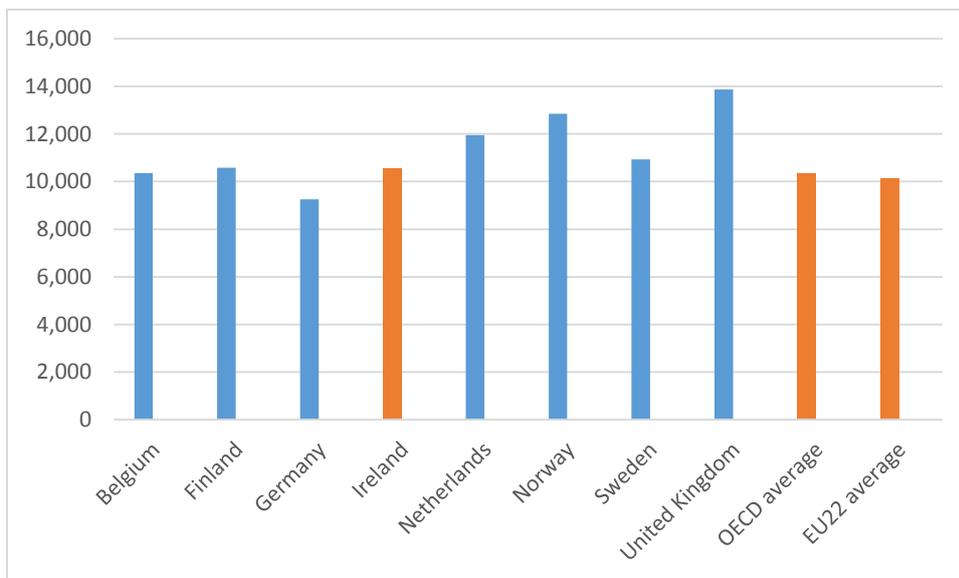
3.3 International Comparisons

Figure 3.4 below sets out annual expenditure on core educational services including all expenditures that are directly related to instruction in educational institutions, including teachers' salaries, construction and maintenance of school buildings, teaching materials,

¹⁵ While average fee is used in this analysis, HEA advise that non-EU students tend to be in higher cost areas in the Universities and as such may impact on the average.

books and administration. Expenditure in equivalent USD in Ireland at \$10,545 is just above the OECD average of \$10,348.

Figure 3.4: Annual expenditure per student by educational institutions for core educational services (2014)¹⁶



Source: OECD Education at a Glance, 2017

3.4 Mature Students

With regard to mature students, the analysis assumes that this cohort will increase by 25% over the period. Latest available HEA data shows that over time mature students as a percentage of overall undergraduate students decreased from 15% in 2010/2011 to 10% in 2015/2016. This equates to a decline of c. 1,800 mature students entering full time undergraduate education while the total number of full time enrolments increase. The data also shows that the number of mature students relative to all students enrolling in part time undergraduate education decreased from 92% in 2010/2011 to 85% in 2015/2016; the proportion has declined in part due to the increase in overall full time undergraduate numbers and improved labour market conditions.

¹⁶ In equivalent USD converted using PPPs for GDP, by level of education and type of service, based on full-time equivalents

4. Student: Staff and Academic: Support Staff Ratios

The purpose of this Section is to examine student to staff ratio and academic to support staff ratio parameters used in the Expert Group Report.

4.1 Funding needs as set out in the Expert Group Report

The Expert Group estimated that the HE sector requires an increased annual investment of €600 million by 2021 and €1 billion by 2030. These estimates were based on meeting increased student demand, including demographics, and reducing the student/staff ratio in Higher Education from a ratio of 20:1 to 14:1.

It is important to highlight that student staff ratio is not a proven indicator of quality at third level. The OECD warns, when examining the student staff ratio *“comparisons at this level should be made with caution, since it is difficult to calculate full-time equivalent students and teachers on a comparable basis”* (Education at a Glance, 2017, page 354). The Expert Group also recognises that a falling student staff ratio is a crude indicator and only *“becomes telling if it results in less supervision of project work, less one-to-one engagement, less feedback and less time to accommodate diverse learning styles”*.

However, while the student staff ratio is a proxy for quality of education it does have implications on international higher education rankings¹⁷.

Comparisons with other OECD countries are also limited as student staff ratio in Ireland relates to public institutions while the ratio for many other countries is for public and private institutions. The OECD Education at a Glance¹⁸ also outlines that the evidence of the effects of differences in class size on student performance is weak. Overall, the OECD average student staff ratio in 2015 was 16:1 and 20:1 in Ireland. Concerns have been raised, for example by Quality and Qualifications Ireland (QQI) and the HEA, about the impact of increased student to staff ratios on the quality of the learning experience. However, it is important when examining the quality of the student learning experience that qualitative

¹⁷ These rankings are used to inform student choice, identify potential HEI partners and employers using rankings for recruitment and publicity purposes.

¹⁸ Page 394: http://download.ei-ie.org/Docs/WebDepot/EaG2016_EN.pdf

data such as student surveys, for example the Irish Survey of Student Engagement (ISSE), are considered.

4.2 Quality and Performance of HE Sector

While the student staff ratio is a widely used proxy for performance of higher education institutions and systems, it is important to be aware of its limitations and that it does not reflect class size, student contact hours and wider engagement, which makes international comparisons difficult. As outlined earlier, student staff ratios are not a feature of Government policy in the HE sector, with no national model for the allocation of staff.

There is a need within the Higher Education sector to establish agreed system wide quality output metrics. While it is acknowledged that quality metrics in education is a contested and subjective issue, there is nonetheless a need for a suite of alternative quality metrics to be developed to assess quality of education provided. These metrics must be clearly defined and agreed upon before analysis is undertaken with the view of measuring a certain action and its impact upon these metrics.

As mentioned, one of the main limitations with the student staff ratio metric is that it does not reflect class size of contact time and engagement with students by academic staff. For example, contact hours, referring to teaching time and time spent face to face engaging with students, is a key consideration in measuring quality. Greater data on the number of contact hours would be beneficial and facilitate further analysis measuring quality in the sector. While there are observable benefits to outlining metrics that contribute to educational quality, these same metrics can help feed into performance evaluation and the analysis of academic performance within the higher education sector.

It is important to note that research is also a key output of the HE sector and a vital measure of quality. A greater understanding of the interaction of contact hours and research output is needed also; in order to understand how these competing functions might be balanced appropriately.

Further quality metrics that could be examined include; employability of graduates, connections to industry, entry competition and international collaboration.

Internationally, student surveys are a key data source¹⁹ for quality assessment in higher education. At an EU level, EUROSTUDENT²⁰ collates comparable data on the social dimension of European higher education. It also collates data on labour market issues including students' own assessments regarding their preparedness for entering the labour market. On the whole students' perceived preparedness by their institutions for the Irish labour market are positive. For each sub-category of student at least 70 percent feel well or very well prepared to enter the Irish labour market. The highest levels of 83 and 81 percent are for part-time and postgraduate students respectively. Furthermore, the percentage of students who feel poorly prepared to enter the Irish labour market is very low at 9 percent of the total student population. However, from an international perspective, the survey shows that more students feel like they are prepared for entry into the Irish labour market than elsewhere while in parallel a large proportion of students feel like they will have to go abroad in order to find work in their area of study.

The Irish Survey of Student Engagement²¹ included survey data from 35,850 students from twenty seven HEI's. The sample includes 17,902 first year undergraduate students, 12,554 final year undergraduate students and 5,394 postgraduate students. The main purpose of the survey is to provide benefits to each institution and its students by helping to improve feedback and appropriate follow up action. Objectives identified for the survey include:

- To increase transparency in relation to the student experience in higher education institutions
- To enable direct student input on levels of engagement and satisfaction with their higher education institution
- To identify good practice that enhances the student experience
- To assist institutions to identify issues and challenges affecting the student experience

¹⁹ See Williams, J. (2014). Student feedback on the experience of higher education. A Significant Component of Institutional Research Data.

²⁰ http://www.eurostudent.eu/index_html

²¹ <http://studentsurvey.ie/>

- To serve as a guide for continual enhancement of institutions' teaching and learning and student engagement
- To document the experiences of the student population, thus enabling year on year comparisons of key performance indicators
- To provide insight into student opinion on important issues of higher education policy and practice
- To facilitate comparison with other higher education systems internationally

While acknowledging the cultural and contextual differences, the ISSE survey includes comparisons with survey results from other countries (UK and US). This provides a useful insight into the perception of students in Irish institutions relative to other jurisdictions.

While recognising concerns regarding the reliability and validity of student survey data as evidence in decision-making, there are numerous metrics within the ISSE that could be used as a complementary barometer when analysing quality of education received by students and identifying clear deficiencies or issues that warrant greater attention. The use of survey results could also assist in informing performance analysis and evaluations in the sector. Combining ISSE result data, graduate outcomes (Table 5 below) and employment data would allow for greater transparency into the inputs and outputs of higher education in Ireland. The Department of Education and Skills has committed to initiating a review of quality in higher education. Consultations are due to commence in mid-2018.

Table 5: Third Level Graduation Outcomes Ireland (2010-2014)

Among 2010 Graduates, 66% were in substantial employment in the first year after graduation, and this had increased to 76% for 2014 graduates.	About three quarters of level 6 and 7 graduates from 2010 had re-enrolled in education in their first year after graduation.
More than a quarter (28%) of 2014 graduates had re-enrolled in education in the first year after graduation, with most of these being simultaneously in substantial employment.	Median weekly earnings for 2010 graduates with a level 6 award rose from €245 in the first year after graduation to €475 five years later while the median for graduates with a level 10 award rose from €705 to €920.
Median weekly earnings for 2010 graduates rose from €420 in the first year after graduation to €640 by the fifth year.	Five years after graduation, median weekly earnings for graduates of level 8 awards with a First Class Honours were €745, which was €175 higher than the median of €570 for graduates with a Third Class Honours.
In the first year after graduation, median weekly earnings were equal for men and women at €420 per week. However, after five years, median weekly earnings for men, at €655 per week, were €20 above the figure of €635 per week for women.	The field of study with the highest median weekly earnings five years after graduation was Information & Communication Technologies at €775 followed by Education at €740 and Health & Welfare at €705.

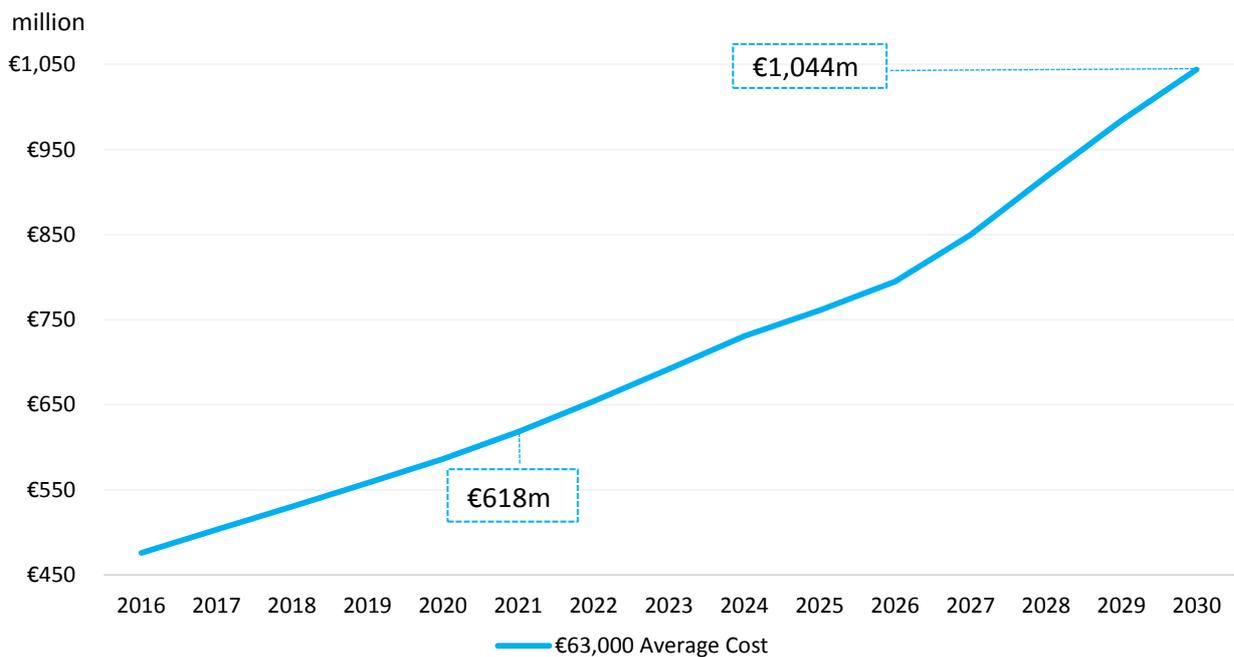
Source: CSO Higher Education Outcomes Graduation Years 2010-2014

Notwithstanding these wider considerations of how quality in the HE sector is assessed, it is useful to analyse the implications of achieving a target of 14:1 as set out in the Expert Group Report.

4.3 Average salary cost per academic and support staff

The Expert Group analysis used an average salary cost of €63,000 (including PRSI) for academic and support staff. The analysis holds this average cost constant over the period (2015-2030) and does not take into account future pay changes in figure 4.2 (below). However, the analysis does grow staff costs when combined with all other expenditure by the percentage increase in demographics. Further detail on the salary trends etc. is set out in Section 5, Pay Developments.

Figure 4.2: Funding requirement based on average salary cost of €63,000



Source: Department of Education and Skills

4.4 Staffing ratios

The Expert Group estimates of €600 million by 2021 and €1 billion by 2030 were based on meeting increased demographics and reducing the student/staff ratio in Higher Education from the current 20:1 to 14:1 using an average cost per staff (section 4.3) and maintaining the current ratio of support to academic staff at .85 to 1 (section 4.6).

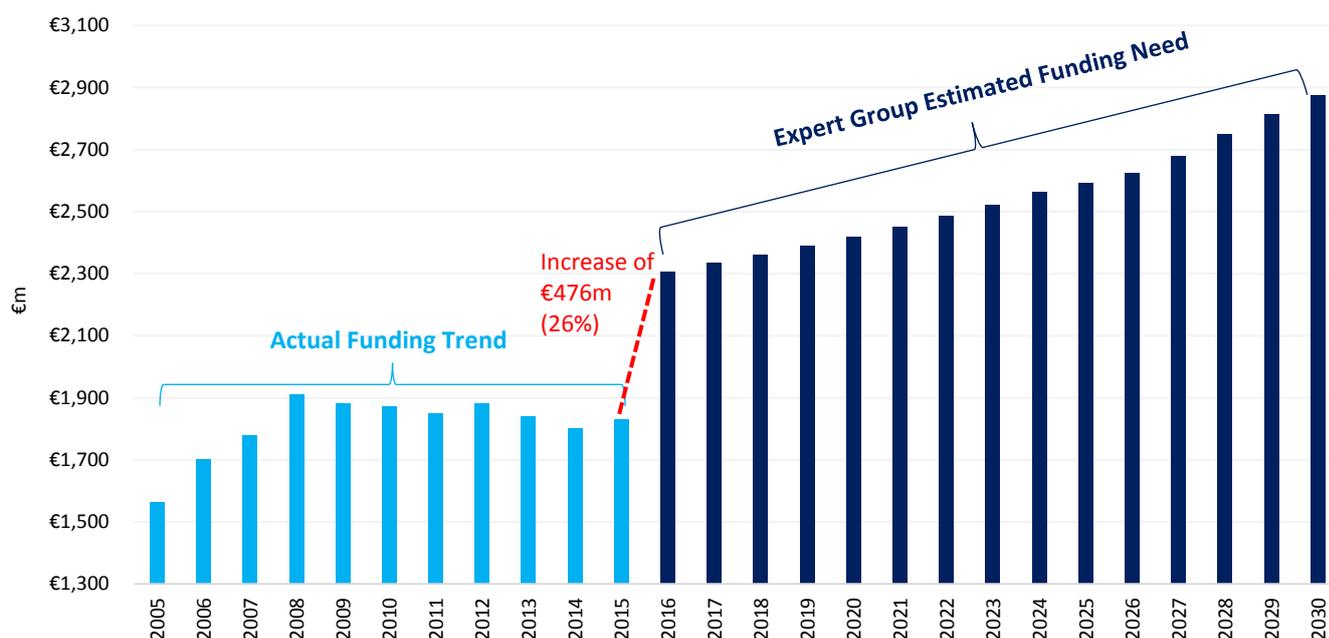
4.5. Explaining the €600m and €1 billion estimated future funding needs

This section explains how the figures of €600m and €1bn were calculated in the Expert Group Report. €455m is used as the base figure for each year in the analysis. This is the level of expenditure required to reduce the student staff ratio to 14:1 immediately in 2014/2015 and is based on:

- Full time equivalents (FTE) numbers were calculated from full time, part time, remote and apprentice learners (subtracting Royal College of Surgeons Ireland). This yielded a figure of 192,294 FTE for 2014/2015.

- To reach a student staff ratio of 14:1 (based off the above FTE figures) this would require 13,735 academic staff (representing an additional 3,913 staff or an increase of 40%) at an estimated cost of €246.5m.
- The ratio of academic and support staff is held constant at .85:1. This would require 11,617 support staff (an additional 3,310 support staff) at an estimated cost of €208.5m.
- Combining the cost of academic and support staff (€246.5m + €208.5m) equals €455m. This €455m is the funding required to decrease current FTE population and student staff ratio to 14:1 in 2014/2015. The €455m was then added to core funding received by the HE sector in 2014/15 of €1,831m (combination of state grants, student contribution and other fees and income) resulting in an estimated total funding requirement of €2,286m in 2014/15.
- To project the future funding needs while preserving a staff student ratio of 14:1 and to provide for demographic projections this new total base funding requirement is grown by the projected percentage increase in the stock of students based on demographic projections. For example, under S2, from 2014 to 2015 full time enrolments increase from 169,474 to 173,058 (.91% increase). Therefore the €2,286m is grown by .91%. This yields a new total funding figure for 2016 of €2,307m (€21m increase).
- €21m is taken as the funding needed to account for demographics in 2016 while including the initial €455m required to reach 14:1 in the base year. This figure is added to the €455m and is cumulatively increased throughout the period. Therefore funding required to introduce and maintain 14:1 in 2016 is €476m, €503m in 2017, €530m in 2018, €558m in 2019, €586m in 2020 and €618m in 2021 continuing out to a final figure of €1,044m for 2030.
- The rationale for increasing the entire funding base for the sector by demographic projections and not just the academic staff component of costs is unclear but may be related to the difficulties in projecting FTE students (discussed in more detail below).

Figure 4.3: Past funding compared to the funding need outlined in the Expert Group Report



Source: Department of Education and Skills

The above graph (figure 4.3) outlines the actual expenditure trend in the third level sector from 2005 to 2015 and the future funding estimates outlined in the Expert Group Report. As illustrated above, under the Expert Group Report, there would be a significant increase in the level of funding from 2015 to 2016 of an additional €476m (26%). This immediate increase is implemented in the Expert Group Report to decrease the student staff ratio to 14:1, going forward to 2030 the funding requirements increases as the entire cost base is incrementally increased by 25% to account for projected demographic pressures.

Table 6: Expert Group Funding needs in 2021 and 2030.

Year	Funding Required for 14:1 in base year	Funding needed for demographics	Total required as per Expert Group Report
2021	€455m	€163m	€618m
2030	€455m	€589m	€1,044m

4.5.1 A reduction in student staff Ratio to 14:1 by 2021

The two main effects of implementing a 14:1 target student staff ratio by 2021 and increasing maintaining the academic support staff ratio constant at 0.85:1 translates into:

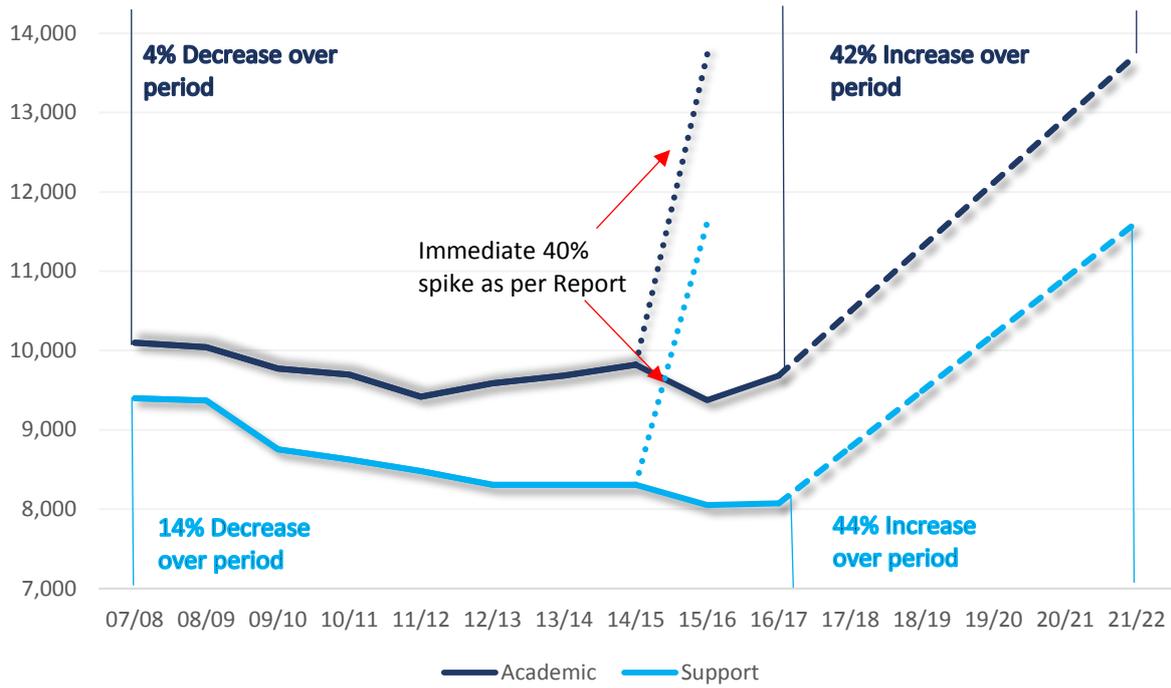
- A 42% increase in the level of front line academic staff from 9,684 to 13,735.
- A 44% increase in the number of support staff from 8,073 to 11,617.

A key concern, additional to the funding implications, is the capacity for the system to meet the additional 4,000 (42%) teaching staff required to meet a 14:1 target and whether the impact of such a measure would simply displace the external/own resource funded staff to Exchequer funded posts.

Figure 4.4 outlines the changes in staffing levels, for both academic and support staff, required to achieve the 14:1 student staff ratio as well as holding the .85:1 support staff ratio constant.

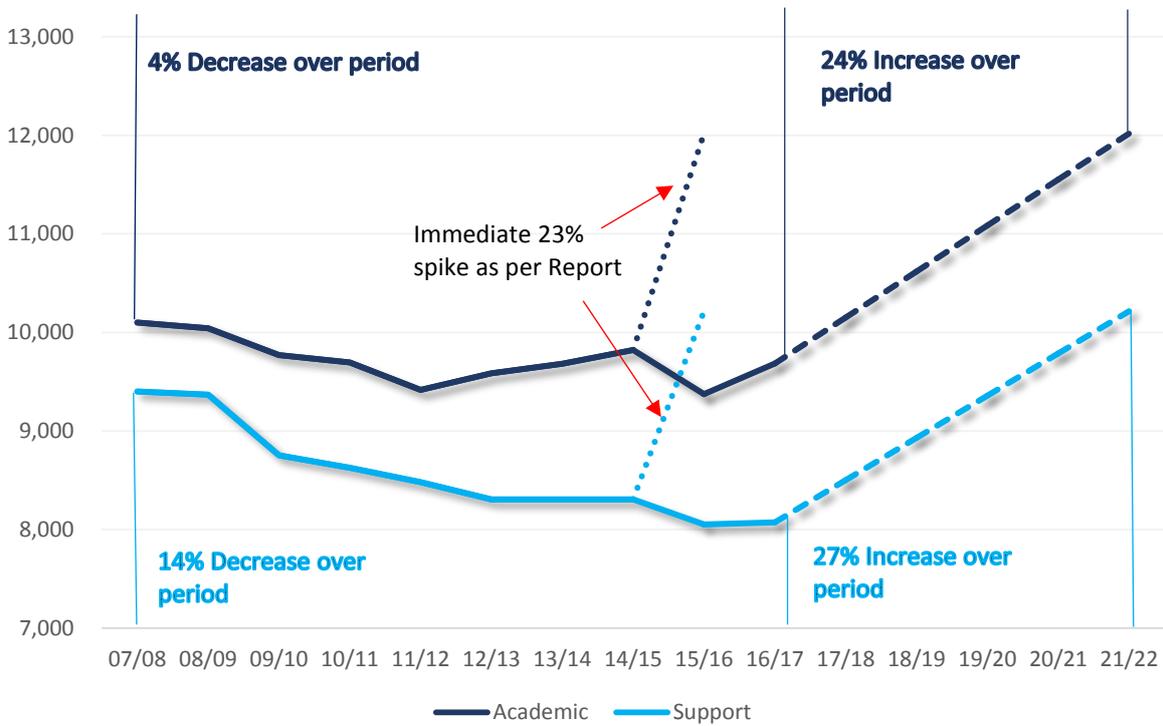
The precise phasing of the reduction in the student staff ratio is unclear, while the Expert Group recommends some front-loading, the analysis underpinning the Report is based on an immediate reduction in the student staff ratio. For the purpose of our analysis below we assume an incremental progression towards the target by 2021.

Figure 4.4. Academic & Support Staff (WTE) 2007 – 2021 (14:1)



Source: Department of Education and Skills

Figure 4.5: Academic & Support Staff WTE 2007 – 2021 (16:1)



Source: Department of Education and Skills

The above graph (figure 4.5) outlines the impact of targeting a 16:1 student staff ratio. There has been a decrease of 4% in academic staff over the period 2007 to 2016 and a 14% decrease in support staff during the same period. In order to achieve a target of 16:1, the OECD average, would require a 24% increase in academic staff out to 2021 and a 27% increase in support staff to allow for a support to academic staff ratio of 0.85:1 to be maintained. The incremental period begins from 2016/2017 year as this is the most up to date data, while the baseline increase is implemented in the same year as the Expert Group Report (2014/2015).

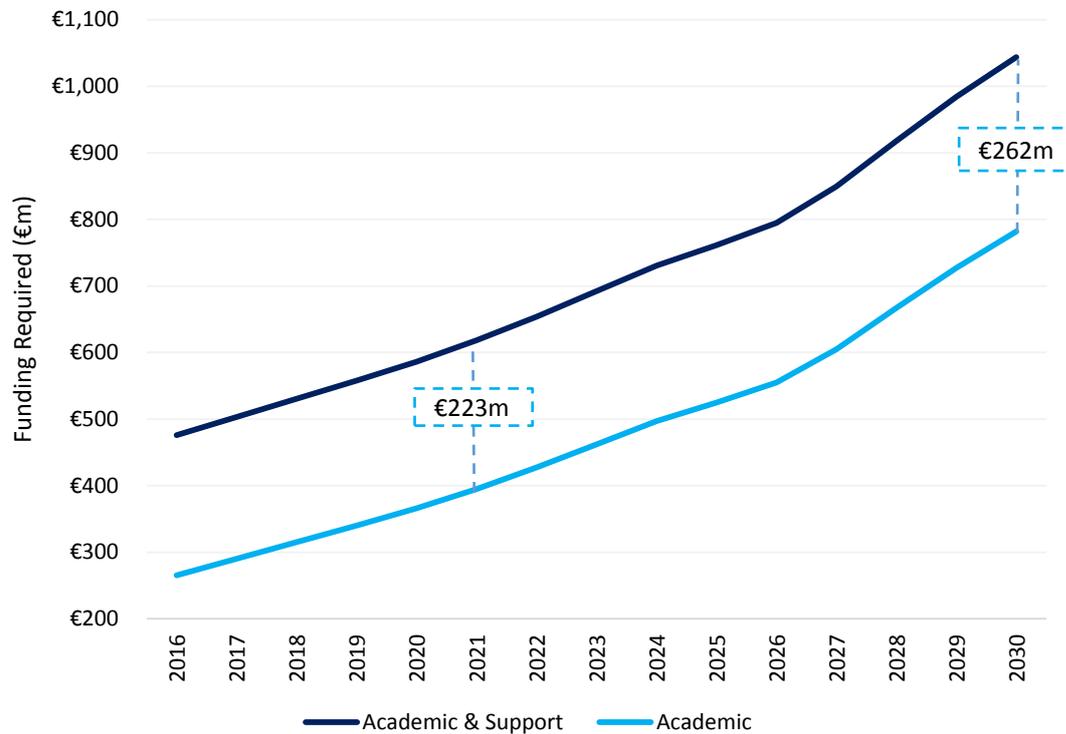
It is important to note that the above graph holds student FTE (192,294) constant throughout the period, however, it is noted that student numbers will increase. As outlined in section 3.1 there are challenges to calculate FTE, so for ease of analysis, FTE is held constant i.e. full time, part time and remote learners are not forecasted into the future. Therefore it is likely, due to actual demographic increases, that the increase in support and academic staff from 2017-2021 envisaged under the Expert Group's report would be larger than what is represented above. As outlined in section 4.5 the Expert group increased the entire funding base by 25% over 2015-30 to allow for demographic pressures, it is likely a large proportion of this additional funding requirement was proposed for staff related costs. Also the analysis underpinning the Expert Group Report outlines that the 14:1 ratio would be implemented immediately, however in the report itself it outlines it would be on a phased basis with some front loading. The graphs above reflect both scenarios.

4.6 Support to academic staff ratio

As outlined in Figure 4.4 maintaining the support to academic ratio at 0.85 : 1 would require a minimum²² increase of over 2,835 support staff by 2021 (44%) or 2.5 times the level of the reduction in the number of support staff during the years of the financial crisis. While the costs of maintaining support to academic staff ratio are included in the €600 million funding need identified by the Expert Group, they are not counted or do not impact directly on the student staff ratio. However, it is acknowledged that support staff reductions may reduce academic staff availability for teaching and student contact, but given that contact hours among academics and students is not recorded, it is difficult to determine this impact.

²² The figure does not include future demographic need increase in academic staff.

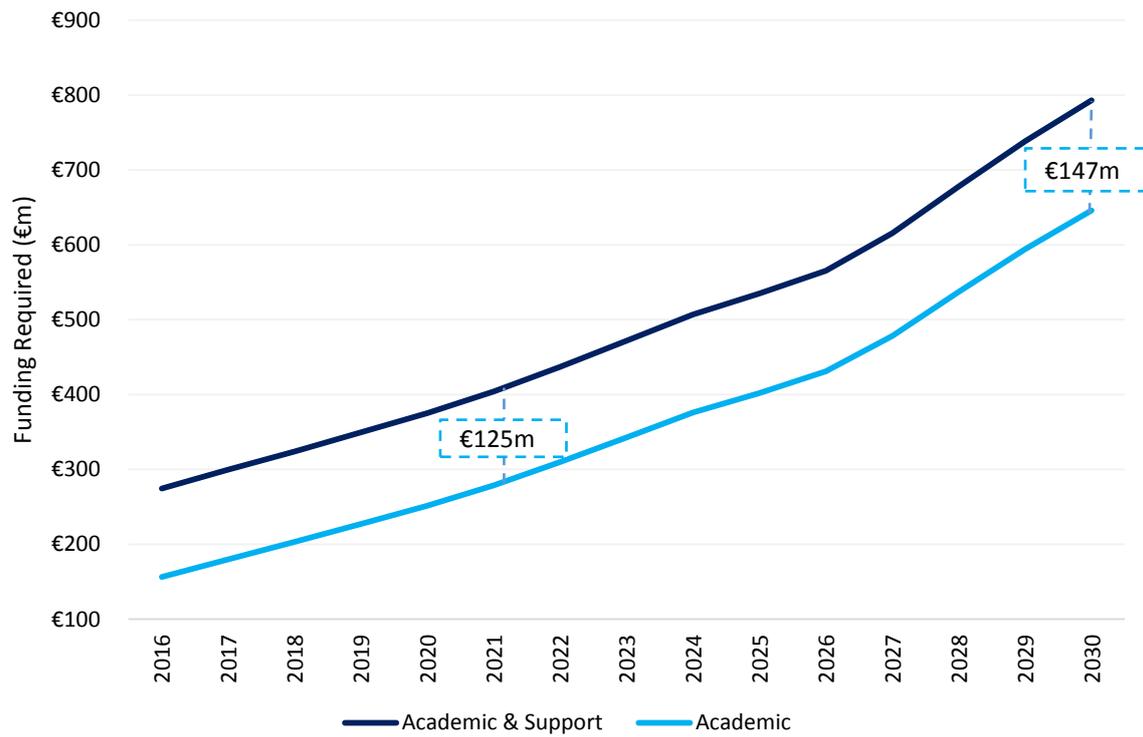
Figure 4.6: Funding requirement for student staff ratio of 14:1



Source: Department of Education and Skills

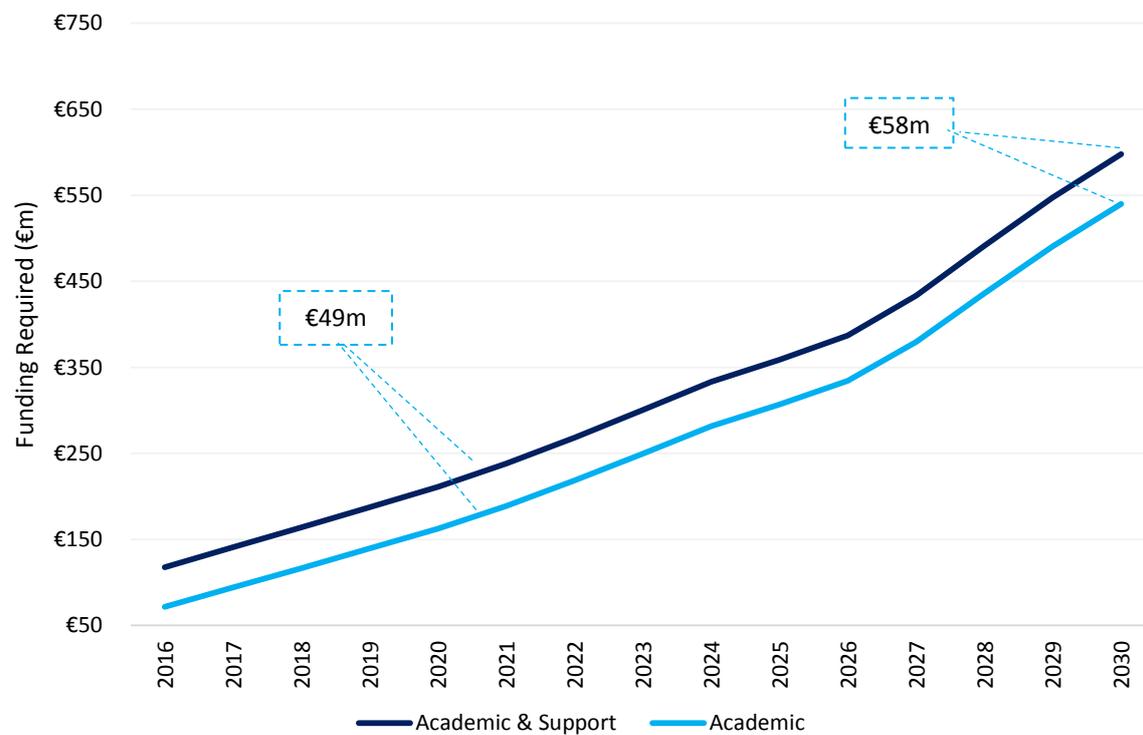
The above graph (figure 4.6) outlines the difference between including academic and support staff and academic staff only. The Expert Group focuses on two years in particular, 2021 and 2030. Including support staff in the funding requirement increases the 2021 funding requirement by €223m and the 2030 funding requirement by €262m.

Figure 4.7: Funding requirement for student staff ratio of 16:1



Source: Department of Education and Skills

Figure 4.8: Funding requirement for student staff ratio of 18:1



Source: Department of Education and Skills

Figures 4.7 and 4.8 illustrate the impact of different student staff ratio scenarios on funding levels required, at OECD level and EU 22 levels of 16:1 and at an alternative 18:1 scenario. The magnitude of expenditure that is required decreases as the student staff ratio increases. For a 16:1 ratio, the inclusion of support staff amounts to an additional €125m and €147m in 2021 and 2030 respectively. At an 18:1 ratio, the amounts are €49m and €58m in 2021 and 2030.

Another broader consideration here is – and while recognising the challenges that crisis-era staffing reductions presented – they did drive efficiencies in the sector and result in significant reform and restructuring. Reform measures during this time include:

- National Strategy for Higher Education to 2030;
- Higher Education System Performance Framework for 2014–16 and 2017-2020;
- National Access Plan and evolving approaches to access;
- National Forum for the Enhancement of Teaching and Learning and complementary supports in improving quality;
- Reforms in the institutional landscape included development of Technological Universities;
- Wider public sector reforms including shared services and procurement reform.

Failing to take account of these efficiencies and restructuring, as the economy enters a period of stability and growth and increased demands on the Exchequer, would be an inefficient approach. While there may be a need for additional support staff in certain areas it is important that frontline staff are prioritised and that the dividend from recent reforms is preserved and factored in the future funding needs for the sector.

5. Salary and Pay

This section outlines pay developments since the Expert Group Report was published in 2016 as well as examining high level aggregate and average pay trend data.

5.1 Overview and recent pay developments

Against the backdrop of the economic crisis, a series of emergency measures known as the Financial Emergency Measures in the Public Interest (FEMPI) Acts 2009-2013, were introduced. The measures were agreed as part of the first Public Service Agreement (PSSA) 2010-2014: the Croke Park Agreement, which included reforms such as: the introduction of the Pension Related Deduction (PRD); all public servants to start on the minimum point on the scale; continued reduction in public service numbers; and a 10% reduction in the pay of all new entrants to the public service. The Higher Education specific measures included an additional hour per week to facilitate educational activities and the implementation of redeployment schemes for staff across the Institutes.

Subsequent to the Croke Park Agreement, was a second PSSA covering 2013-2016 (the Haddington Road Agreement), which introduced further measures on working hours, allowances, productivity and a reduction in all salaries over €65,000. In the Higher Education sector this included an additional 78 hours per annum for academic staff and a reduction in the examination marking fee.

In 2015, the Government commenced the gradual unwinding of certain measures contained in the FEMPI 2009-2013 Acts as part of the PSSA 2013-2018 (the Lansdowne Road Agreement) and the subsequent PSSA 2018-2020 extension to the LRA. These agreements will gradually unwind many of the FEMPI measures, while not exceeding available additional resources or increasing the national deficit.

Figure 5.1 Overview of measures from Public Service Stability Agreements 2016-2020



Source: Department of Public Expenditure and Reform

The impact of measures outlined in Figure 5.1 will remove all public servants earning up to €70,000 out of FEMPI pay provisions (almost 90% of all public servants), and almost a quarter will have exited FEMPI pension levy payments. It also means 73% of public servants are set to gain more than 7% in pay by 2020.

5.2 Salary assumptions in Expert Group

As set out in Section 4.3, the Expert Group analysis used an average salary cost of €63,000 (including PRSI) for academic and support staff. The analysis held this average cost constant over the period (2015-2030) but grew staff costs, together with all other expenditure, by the average annual percentage increase in demographics. There is no differentiation made between academic staff and support staff nor is there any differentiation between universities and Institutes of Technology, where it would be expected that universities would have a higher cost structure than IoTs.

Furthermore, as the average salary figure is held constant over time it does not take into account potential future pay increases for academic and support staff. A further breakdown on how the €63,000 was calculated was not available and therefore limits further analysis of that figure. The latest data suggest that the average staff cost is now around €71,000.

6. Wider Policy Implications

The purpose of this Section is to set out wider policy implications including fiscal considerations, the impact of non-Exchequer funded staffing on student staff ratios and the wider interaction between HE and FET sectors.

6.1 Wider Fiscal considerations

The scale of the level of funding needs identified by the Expert Group Report presents a significant challenge to the Exchequer which currently provides total annual funding of approximately €1.6 billion a year to the HE sector or 16% of the funding to the education sector as a whole and 2% of total Exchequer expenditure.

Universities have traditionally had autonomous borrowing powers as they are classified as outside General Government. As such, borrowings by Universities are 'off-balance sheet' and do not impact on the level of General Government Debt. A recent assessment²³ by the CSO showed that all seven Universities have covered more than 50% of their production costs in recent years by sales and that this trend can be seen to increase over the period for all but one institution. Therefore, based on this assessment the CSO determined that all seven Universities be classified as publicly controlled market producers in the Non-financial corporations sector (S.11). An increase in State support without significant corresponding funding from both own resource income, employers and the student, could potentially result in the Universities being reclassified as within general government²⁴, thereby impacting on the calculation of general government debt and limiting of Universities borrowing capacity.

6.2 Impact of other Exchequer and non-Exchequer funded posts / Student Staff Ratio methodology

As previously highlighted in Section 2.3, while pupil teacher ratios are a feature of Government policy in the Primary and Post-Primary Sectors, it is important to note there is no similar ratio based policy in place in the Higher Education Sector. Government policy on staffing in the Higher Education sector is currently centred on an Employment Control

²³ <https://www.cso.ie/en/releasesandpublications/in/gfs/informationnotice-classificationofuniversities/>

²⁴ Eurostat has confirmed that it agrees with the CSO's assessment of the current status of Universities.

Framework, which was initially introduced across the Public Service in 2009 as a policy response to the emerging fiscal crisis.

While Government policy on ECFs has been replaced with delegated sanction arrangements for much of the public service since 2015, an ECF remains in place for the Higher Education sector. The ECF for the Higher Education Sector, which has been updated on several occasions since its introduction to accommodate increased student numbers, provides institutions with considerable flexibility to fill vacancies, through recruitment or promotions on the basis of meeting an overall ceiling of posts. It is also important to bear in mind that the ceilings do not apply to non-Exchequer, own resource funded posts in the sector.

The HEA Student/Academic staff ratio is based on the following calculation:

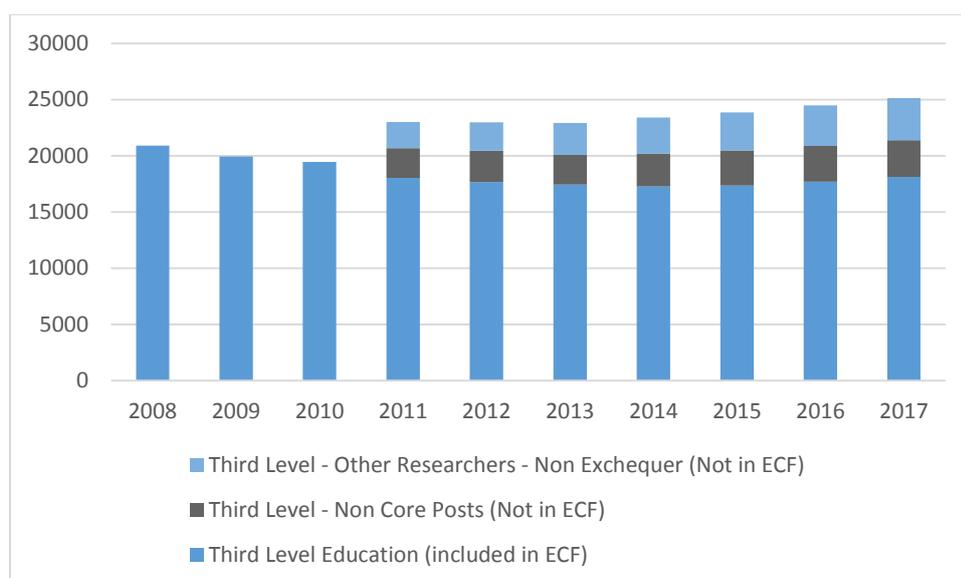
$$\text{Student Academic Staff Ratio} = \frac{\text{Number of FTE Students}}{\text{Academic Lecturing Staff}}$$

Full-time (includes "Other Enrolments IoTs" excluding apprenticeships) +
0.5 * Part-time (includes "Other Enrolments IoTs" excluding apprenticeships) +
1/2 * apprenticeships.

In addition to the c.18,000 Exchequer funded core teaching and support staff in the HE sector, there are also over 7,000 staff employed in the sector comprising:

- 3,200 non-core funded research *and related project posts, including commercialisation posts, funded from Exchequer resources external to the institution;*
and
- 3,800 Other Research and/or Specialist project-based posts funded from non-Exchequer sources: EU research and other grants, private sector income, international student income, postgraduate and part-time fees - but not including full-time EU undergraduate tuition fees/student contributions as non-Exchequer, non-core income.

Figure 6.1: Staffing in Higher Education²⁵



Source: Department of Public Expenditure and Reform

The current HEA methodology for estimating the student staff ratio applies an estimated figure of 200 (c.3% of non ECF posts) as the corresponding level of FTE teaching staff from non-core and non-Exchequer funded posts. The basis for this estimate is unclear and there are significant data limitations which restricts a clearer understanding of the numbers involved. However, it is recognised in the final report of the Review of the Allocation Model for Funding Higher Education Institutions that:

“Since 2008, an Employment Control Framework (ECF) has been in place which has driven core staffing levels down by 12%. To meet ECF targets, there has been a growing tendency in some institutions to deploy part-time and casual staff which are categorised as ‘non-core’ to accommodate increased student demand”

This is supported by anecdotal evidence elsewhere in the system and would suggest that the levels of non-Exchequer funded teaching posts has increased significantly since 2008 to counteract the reductions brought about by the ECF. As highlighted the basis for the 200 estimate used in HEA methodology is unclear and potentially understates the level of teaching staff thereby overstating the current student staff ratio. The impact on other key activities in

²⁵ Data on other non-core and non-Exchequer funded staff not available prior to 2011

the higher education sector apart from teaching (e.g. research) should also be considered when assessing trends in the level of non-Exchequer funded teaching posts.

6.3 Interaction between Higher Education and the Further Education and Training Sector

It is imperative to the economic growth of Ireland that the country has not just a well-educated work force but also a rightly skilled work force. Ireland has one of the most highly educated populations for people less than thirty years of age within the EU, however, according to the OECD, Ireland also has a potential issue with skills mismatch and over education.

Skills mismatch covers a very broad range of issues including over and under-education, over and under-skilling, skill gaps and shortages. It is important to point out that when discussing high rates of over-education or over-skilling, the policy response is not to reduce the education or skills base of the country but to better utilise the resources of the labour force. However, an important consideration is that within the changing landscape of higher education is that it may not be the best delivery method for everyone or may not be the most cost efficient way of delivering the skills required for the labour market. Further ESRI and EU CEDEFOP research on skills mismatch is set out in Box 2 below.

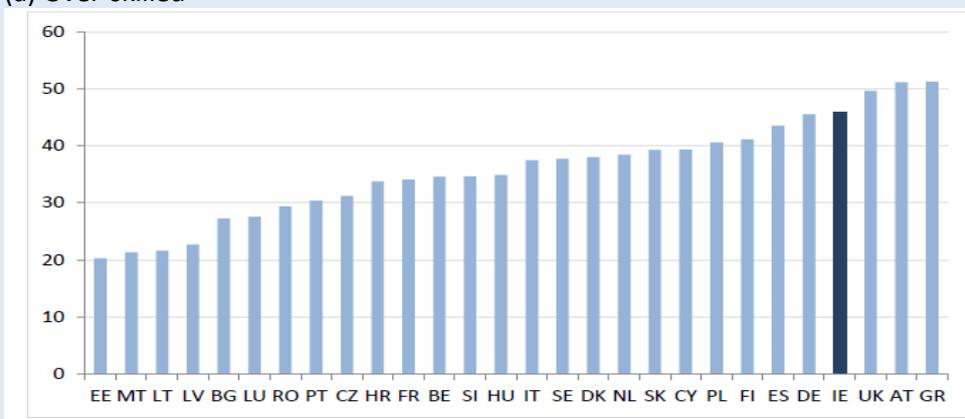
Box 2: Skills Mismatch in Ireland

McGuinness et al. (2017) (<https://www.esri.ie/pubs/OPEA153.pdf>) examined patterns in over-education between countries using a specifically designed panel dataset of over education in Europe constructed from the quarterly Labour Force Surveys of 28 EU countries. The study found Ireland had a relatively high level of over education at 33 per cent that over the period 2001 - 11, compared to EU average of 19 per cent.

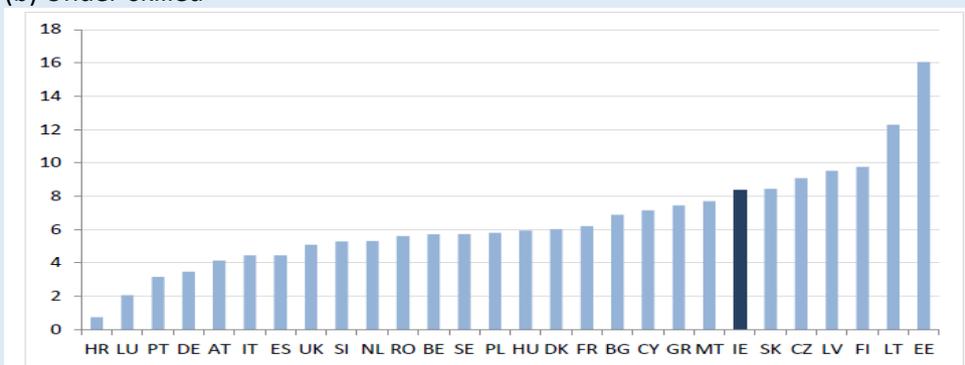
Similarly, with regard to skills, the 2014 European skills and jobs survey of the EU28 (<http://www.cedefop.europa.eu/en/publications-and-resources/publications/8088>) found that 46 per cent of full-time workers in Ireland consider themselves to be over-skilled (fourth highest) compared to 8 per cent under-skilled (seventh highest) and 46 per cent (fourth lowest) matched.

Employees reporting that they are:

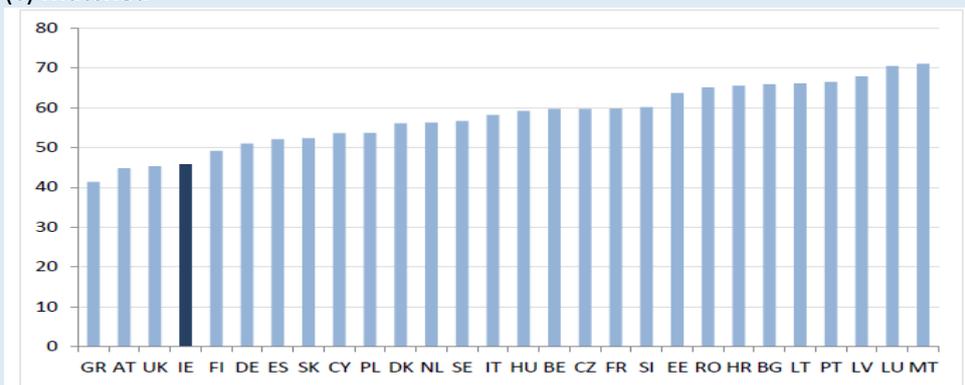
(a) Over-skilled



(b) Under-skilled



(c) Matched



The Expert Group welcomed the emphasis in the National Skills Strategy on the creation of a more robust and valued FET sector and outlined that it will create a more comprehensive and integrated post-second level platform for delivering the skills requirements of the future. The Expert Group also states the reform and increased focus on FET will not take away from the role higher education will play in meeting those needs and the investment requirements of the sector arising as a result. Furthermore the FET sector should contribute to dealing with future demographic demand in the HE sector.

The Expert Group highlights that the current system of post-second level education is imbalanced, in particular:

- 1) It is overly focused on higher education at the expense of further education
- 2) It is overly geared towards the typical 18 year old school leaver undertaking a fulltime course.

The Expert Group also outlines that more needs to be done to ensure the development of more complementary missions within the higher education sector.

Significant reforms are underway to ensure that Ireland's FET sector develops into a more coherent, relevant and focused provider and a valued alternative to higher education. In tandem with the development of a strengthened FET sector the Expert Group outlines that a greater alignment, integration, and progression pathways between institutions in the two sectors is necessary.

The alignment of FET provision with the skill needs of the economy and the needs of a diverse group of learners, including school leavers, those looking to re-enter the labour market and those already in employment, is an area of significant focus for policy makers. This is influencing the planning of provision through new three year funding agreements between ETBs and SOLAS, the evaluation and reform of individual funding programmes such as PLCs, the flexible delivery of courses through technology enhanced learning and online provision, and the integration of workplace elements into programmes to support the preparation of work-ready graduates.

The reform of the NTF highlighted in section 2.4.2 also provides the opportunity to define investment priorities in an integrated way across higher education and FET and to ensure that post school provision is well aligned with employer demand and labour market need.

6.3.1 Progression Rates

Another important issue when considering skills and education mismatch is that the figures only represent those who complete the higher education courses and subsequently enter the labour market. There are of course those students who, through a variety of reasons, do not complete courses. Latest HEA research²⁶ (2018) examines the progression of students entering the higher education system in the academic year 2014/15. The key findings include:

- Rates of non-progression vary across fields of study. Construction and related disciplines have the highest non-progression rate at 23%. Medicine has the lowest non-progression rate of all 2014/15 new entrants in profession-oriented courses, at two percent, while Architecture has the highest rate at 20%.
- The rates of non-progression in 2014/15 varied within and between sectors ranging from 27% and 25% at levels 6 and 7 in the Institutes of Technology compared to 15%, 10% and 8% at level 8 in Institutes of Technology, Universities and Colleges.
- In the Institute of Technology sector at level 6, level 7 and level 8, mature students are more likely to progress to the following year of study than a new entrant who is under the age of 23. The opposite is true at level 8 in the University and Colleges sector, where younger students are more likely to progress than mature students.
- Across all levels and sectors, Irish students had a non-progression rate of 15% compared to 14% among non-Irish students.
- Prior academic attainment (Leaving Certificate points) is the strongest predictor of non-progression. Those entering with lower points are much more likely to not progress compared to those entering with higher points.

There is of course a significant cost of non-progression, both the financial cost to the individual student and the economic and financial cost to the State and wider labour market.

²⁶ <http://hea.ie/assets/uploads/2018/05/HEA-Progression-Report-2018-FINAL.pdf>

While there is limited data on the cost to the state of non-progression, high levels of non-progression represent an inefficient allocation of Exchequer resources and impact negatively on the labour market, especially when high rates are in those sectors with skills shortages. For instance, the HEA research referred to above, found that the student most likely not to progress will be a male, with relatively low Leaving Cert points, studying a Level 6 or Level 7 course at an Institute of Technology and are in those sectors of the economy with high labour market needs including computer science, construction and engineering. Alternative paths, such as traineeships and apprenticeships, must form part of policy responses and underscores the need for a shared strategic vision for both the higher education and further education and training sectors.

7. Findings and Recommendations

7.1 Findings

7.1.1 Demographic projections

The Expert Group Report opened up an important debate in Ireland regarding the possible options to ensure sustainable funding for the Higher Education sector and the potential sources of that funding. However, as outlined above any assessment of potential funding needs is extremely sensitive to a wide range of assumptions. Therefore, it is important that any assessment of potential options is based on a robust interrogation of granular data so there is a clear understanding of the efficient cost of delivering a quality education and there is an understanding of the diversity across the sector.

In this regard the most recent DES student projections and assumptions understate the amount of non-EU students and overestimate the amount of mature students entering undergraduate study.

7.1.2 Funding in the HE Sector

The scale of funding needs identified by the Expert Group Report presents a significant challenge to the Exchequer which currently provides total annual funding of approximately €1.6 billion a year to the HE sector or 16% of the funding to the education sector as a whole and 2% of total Exchequer expenditure.

Universities have traditionally had autonomous borrowing powers as they are classified as outside General Government. As such, borrowings by Universities are 'off-balance sheet' and do not impact on the level of General Government Debt. The percentage of Exchequer funding relative to overall funding has decreased in recent years. However, if there was a 5% increase in Exchequer funding without a similar corresponding increase from own resource and other income sources, it could potentially result in the Universities coming on the Government balance sheet, thereby impacting on the calculation of general government debt and limiting of Universities borrowing capacity.

7.1.3 Data on own resource funded activities

One of the most significant restrictions of undertaking analysis in the HE area is the lack of data on own resource funded activities, in this instance on the number of non-Exchequer funded teaching posts. The student academic staff ratio is currently calculated by adding Exchequer funded academic staff plus an estimated 200 non-Exchequer funded teaching posts. The basis for the 200 estimate used in HEA methodology is unclear and potentially understates the level of teaching staff thereby potentially overstating the current student staff ratio.

7.2 Recommendations

7.2.1 Quality Indicators

While student staff ratio is a widely used indicator to allow for international comparisons, its usefulness as a proxy for quality is limited. The HEA should develop more evidence based, system wide quality indicators for the quality of higher education provision. A greater focus on measures such as contact hours could result in the delivery of a better quality of education.

7.2.2 Data requirements

In order to undertake a comprehensive assessment of the various funding options put forward in the Expert Group Report it is important there is a thorough understanding of the potential size and scale of the challenge based on the most up to date and accurate information. For instance, disaggregating student projections to identify non-EU and part-time students, who pay fees covering the full economic cost of provision, would greatly enhance understanding and analysis of the funding needs of the sector.

Separately, in order to better estimate future funding needs of the sector, analysis must move beyond using aggregate average cost. Using actual field of education costings in analysis would produce a more accurate estimate of the future funding needs and also provide greater insights regarding the difference in cost of delivering various courses – thereby allowing policy responses to be tailored accordingly and ensuring resources are better aligned with priorities.

7.2.3 Non-Exchequer resources / staff

The implementation of the funding model review provides the opportunity to ensure that all resources, be they Exchequer or non-Exchequer, are comprehensively and transparently recorded. It is important to understand all components of funding so that any additional Exchequer resources are targeted in the most efficient and efficient way and do not simply displace or replace external/own resources.

The student academic staff ratio is calculated by adding Exchequer funded academic staff plus an estimated 200 non-Exchequer funded teaching posts i.e. non-core/other researcher staff are not included in the ratio. The HEA should seek to capture this data from the HEIs and ensure that student staff ratio fully reflects the total number of teaching staff and ensure this is reflected in returns to the OECD.

7.2.4 International/non-EU students/ Postgraduate Students

Non-EU and post graduate students are correctly included in DES demographic projections, however future funding costings do not take account of the fee income generated from these cohorts. In order to understand the funding needs of the sector it is important that this income stream is captured and clearly identified in a new funding model without disincentivising institutions from attracting international students

7.2.5 Robust cost assumptions

When assessing potential policy responses the costing assumptions underpinning them should be as robust as possible. The Expert Group methodology used €63,000 as the average cost for academic and support staff. Given that data is available on the individual numbers and pay for support and academic staff, average costs applying to each section of staff should be used.

7.2.6 Strategic Vision for HE and FET

Findings from the Expert Group that post-second level education is overly geared towards the typical 18 year old school leaver undertaking a fulltime HE course, coupled with ESRI and HEA research findings on skill underutilisation among Irish employees and high non-progression rates are in those sectors of the economy with high labour market needs including computer

science, construction and engineering – reflects the need for both alternative career pathways to be developed and for an overarching strategic vision incorporating both the higher education and further education and training sectors.

Appendix 1 Quality Assurance Process

This spending review paper has been through the designated quality assurance process outlined by the IGEES QA guidelines. Below are the steps taken within this quality assurance process.

- 1) Line Management: This paper has been reviewed by the Principal Officer and Assistant Secretary with responsibility for the Education and Skills Vote in the Department of Public Expenditure and Reform.
- 2) Steering Group: This paper has been circulated for review to the Steering Group of the Spending Review 2018 and was subsequently further reviewed by a separate subgroup of the Steering Group.
- 3) External: This report was circulated to the Department of Education and Skills and to the Higher Education Authority (via DES) for observations and fact checking.

Quality assurance process

- ✓ Internal/Departmental
 - ✓ Line management
 - ✓ Spending Review Steering group
 - Other divisions/sections
 - ✓ Peer review (IGEES network, seminars, conferences etc.)
- ✓ External
 - ✓ Other Government Department
 - Steering group
 - Quality Assurance Group (QAG)
 - Peer review (IGEES network, seminars, conferences etc.)
 - External expert(s)
- Other (relevant details)