PROJECTIONS OF DEMAND FOR FULL TIME THIRD LEVEL EDUCATION, 2015 - 2029

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1. Introduction

This document provides the latest set of projections of demand for full time third level education for the period 2015-2029. It should be noted that these are projections of likely demand for Department of Education and Skills aided institutions only. Actual enrolments in each year do not always equate with projected demand, as demand is constantly fluctuating in response to the changing economic situation and resulting shifts in prospective students' options and preferences. A separate release on first and second level projections was released in July 2015. This release discusses third level full time projections only.

The numbers enrolled in higher education have been steadily increasing in recent years. Full time enrolments in particular have grown substantially, by over 25% in the past 10 years alone. A number of continuing pressures on demand for higher education will arise from

-Underlying demographic pressure following on from increases in numbers at primary and post primary level in recent years

-The continued increase in attractiveness of third level education as Ireland and other EU and OECD economies seek to move up the value chain in terms of the skills profile of their workforce

-Policy initiatives that aim to increase participation in higher education from under-represented socio-economic groups, mature students, and further education graduates.

Entrants into third level education fall into three main groups, transfers from the second level system before reaching the "mature" cut-off age of 23, international entrants, and mature students. In response to feedback from users of the third level projections, in this iteration of the projections model the emphasis is shifted onto the possible impact of changes to these entry cohort groups on demand for third level education, rather than the impact of changes in migration patterns at first and second level.

The Department's baseline scenario (called S1), assumes that the transfer rate of pupils from second level, the number of mature students and the number of international students will all remain at 2014/15 levels for the period of these projections. A number of alternative scenarios (S0, S2 and S3) are also presented to demonstrate how variations in the components of entry to third level education could affect the projected numbers, when compared to the baseline scenario.

This assumption suggests that demand for third level full time education under scenario S1 is expected to continue to rise every year over the period 2015-2029, reaching 207,544 by 2029, an increase of over 38,000 on 2014 enrolment levels.

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2. Overview of Methodology

The majority of entrants to third level education each year come directly from the second level system, with a further significant proportion entering third level within a few years of leaving second level education. A data matching exercise is carried out using data from the Department's Post-Primary Pupil database and the HEA Student Record System, to arrive at an accurate transfer rate from second to third level education for non-mature students (i.e. those that have progressed to third level education in the five years immediately after leaving second level)

Separately, numbers of mature and international entrants are projected based on current numbers in the system, and these are combined with the entrants from second level to arrive at an overall figure for new fulltime entrants to third level for each year. Adjustments are also made for the relatively small numbers of entrants to non-HEA institutions and for entrants from the private second level sector.

The projected numbers of undergraduate new entrants are combined with the estimated numbers of continuing students each year, using a statistic known as the Rate of Undergraduate Turnover (see page 11 for further details) in order to arrive at a total figure for undergraduate enrolments. Postgraduate enrolments are calculated as a proportion of undergraduate enrolments based on recent trend data available from the Higher Education Authority.

Section 4 from page 8 on below provides a more detailed description of the methodology employed in the projections model.

3. Scenarios

The transfer rate from second to third level has remained fairly stable in recent years, and the most recent exercise shows a transfer rate from second level of 63.8%. This transfer rate is carried through in the baseline scenario (S1). For scenario S1, mature and international new entrants are also maintained around their current levels (approximately 5300 and 1700 respectively).

While it is considered unlikely that the transfer rate to third level will fall significantly in the future given policy targets to further increase participation, and the continued attractiveness of third level education, a scenario was considered (S0) where the transfer rate to third level would fall to 60% in the coming years due to continued recovery in the labour market and possible growth in the further education sector.

Two "growth" scenarios (S2 and S3) are also considered in this report. A low growth scenario (S2) evaluates the impact of increases in mature and international new entrants by 25% on current levels of demand over the period of the projections. A higher growth scenario (S3) considers the impact of the same levels of increase in mature and international new entrants combined with a gradual increase in the transfer rate to third level to 70% over the period of the projections.

More "growth" scenarios are included in this publication to facilitate consideration of possible impacts of current policy objectives in the higher education sector. These include increasing internationalisation of the student population, increasing participation in lifelong learning, and increasing transfer to higher education of those from lower socio-economic groups.

4. Projected Demand for Full Time DES Aided Places at Third Level, 2015-2029

The 2014 enrolment in DES aided institutions, and the projected demand for full time third level education over the period 2015-2029 are shown in Table 1 below. The scenarios S0 to S3 refer to the scenarios, as outlined in Section 3 above. A summary of each of the scenarios is provided at the bottom of Table 1

Table 1: Projections of Full Time Demand for Education in DES-Aided Third Level Institutions, 2015-2029

	S0	S1 (baseline)	S2	S3
2014	169,474			
2015	170502	170890	171,016	171,404
2016	171644	172716	173,058	174,130
2017	172465	174439	175,063	177,037
2018	173123	176166	177,118	180,161
2019	173655	177897	179,212	183,454
2020	174314	179873	181,574	187,134
2021	174788	182125	184,230	191,214
2022	175909	184535	187,057	195,528
2023	177434	186966	189,914	199,856
2024	179104	188796	192,175	203,487
2025	180265	190841	194,658	206,891
2026	181667	194465	198,722	211,696
2027	184582	199092	203,791	217,351
2028	188449	203562	208,706	222,627
2029	192156	207544	213,134	227,244
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 (5300)	2014/2015 levels (5300)	Increase of 25%	Increase of 25%
International Entrants	2014/2015 levels (1700)	2014/2015 levels (1700)	Increase of 25%	Increase of 25%

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Figure A: Projections of Demand for Third Level Education 2015-2029
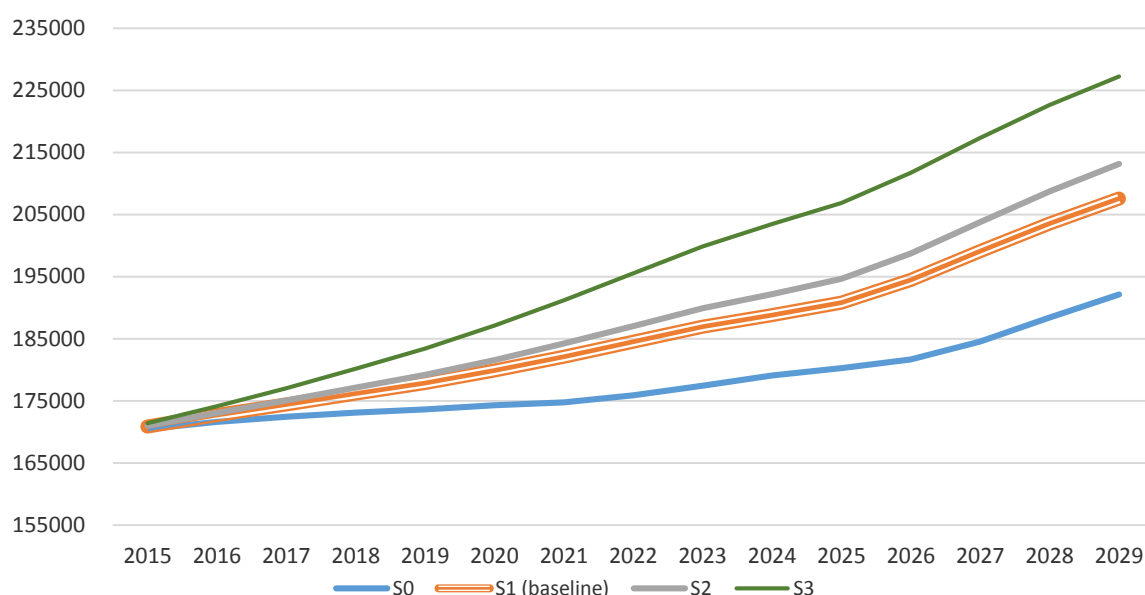
Key points to note:

-Focussing on the immediate three years ahead, under the Department's baseline scenario (S1), demand for full time education is projected to increase by approximately 5,000 by 2017.

-Beyond 2017, even under a scenario with a reduced transfer rate from second level (S0), demand for third level full time education is projected to continue to increase substantially until 2029. This is a direct result of increases in births in recent years, and of the relevant underlying populations at first and second level.

-Under the baseline scenario S1, demand will reach 207,544 by 2029. Scenario S1 assumes a continuation of current levels of transfer from second level, mature students and international new entrants.

-Under the highest growth scenario considered, S3, which envisages a growth in the level of mature and international students of 25% on current levels, combined with an increase in the transfer rate to 70% over the period of the projections, demand would reach 227,244 by 2029.

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5. Components of Demand at Third Level

5.1 Projection of Entrants to Third Level Education

The projection of entrants to third level education involves three separate components:

1) Calculation of a transfer rate from second to third level education.
2) Projection of numbers of mature entrants.
3) Projection of numbers of international students.

5.1.1 Calculation of a Transfer Rate from Second to Third Level

In order to arrive at an accurate rate of transfer of non-mature students from second to third level, a data matching exercise was conducted to estimate the proportion of final year second level students that transfer to third level in the ensuing 5 years.

The most recent data matching exercise was conducted using Higher Education Authority 2014\2015 Student Records System entrants, and second level final year data from the Department of Education and Skills post primary pupils' database for the 5 academic years previous to 2014\2015.

The results of the matching exercise are as follows:

- **47.09%** of the 2013/2014 final year second level cohort were new entrants to third level in 2014/2015

-**10.81%** of the 2012/2013 final year second level cohort were new entrants to third level in 2014/2015

-**3.21%** of the 2011/2012 final year second level cohort were new entrants to third level in 2014/2015

- **1.68%** of the 2010/2011 final year second level cohort were new entrants to third level in 2014/2015

- **0.98%** of the 2009/2010 final year second level cohort were new entrants to third level in 2014/2015

Adding these results together implies that, if the same trends were to continue for future years, **63.8%** of any final year second level cohort will transfer to a HEA third level institution before reaching the mature student age.

Given the underlying demographics, even if this rate is to remain constant into the future, increases in demand for third level education will be seen. The overall numbers enrolled in second level education are projected to rise from 339,210 in 2015 to a peak of almost 411,000 in 2025, and this increase will therefore lead to increased domestic demand coming from the second level sector for third level education.

In addition to the figures above, there are small categories of students also that could not be automatically matched to the HEA data. One such category is the cohort that are entering third level from private second level institutions. Another category of

students are the small numbers that did not have a PPS number available for linking. There is also a small cohort of entrants to DES-aided institutions that do not provide data to the HEA Student Record system. In total, an adjustment is made of the order of 3.1 percentage points to the transfer rate above to take account of these categories of pupils, which gives a total estimated transfer rate of students from the second level sector to third level of approximately 66.9% in 2014/2015. In other words, in total 66.9% of final year second level students (public and private) in any given academic year are estimated to make the transfer to publicly-aided third level institutions before reaching the mature student age of 23.

For the purposes of the projections, the path taken to third level education is irrelevant when calculating the transfer rate from second to third level. Students who do not make the transfer directly to third level may repeat the Leaving Certificate to get more points, pursue a Post-Leaving Certificate course, enter employment, be unemployed for a period of time, or travel abroad for a "gap year" before entering the third level system. Whichever path is taken to third level, this data matching exercise ensures that students who enter third level before the age of 23 after a period of other activity, are included in the transfer rate for projections purposes.

5.1.2 Mature Entrants and International Students

A significant proportion of undergraduate new entrants into the third level sector are mature entrants. These are first time entrants to third level education which are aged 23 or over. Applicants aged 23 or over are entitled to be assessed for financial supports independently of their parents. The age profile breakdown of undergraduate new entrants shows a surge in entrants to third level at the age of 23 and 24, with a gradual levelling off after those ages.

Trends in international student entrants, particularly those from non-EU countries are, in general, not dictated by Ireland's economic or demographic profile of the moment, but rather by events and policies in their home countries.

Given that many third level Irish institutions are aiming to attract a larger number of international students to their campuses, and have stated policy objectives in relation to strengthening lifelong learning, some scenarios shown on page 6 above assume numbers of international and mature students will increase over time (see section "Scenarios" on page 2 for more information).
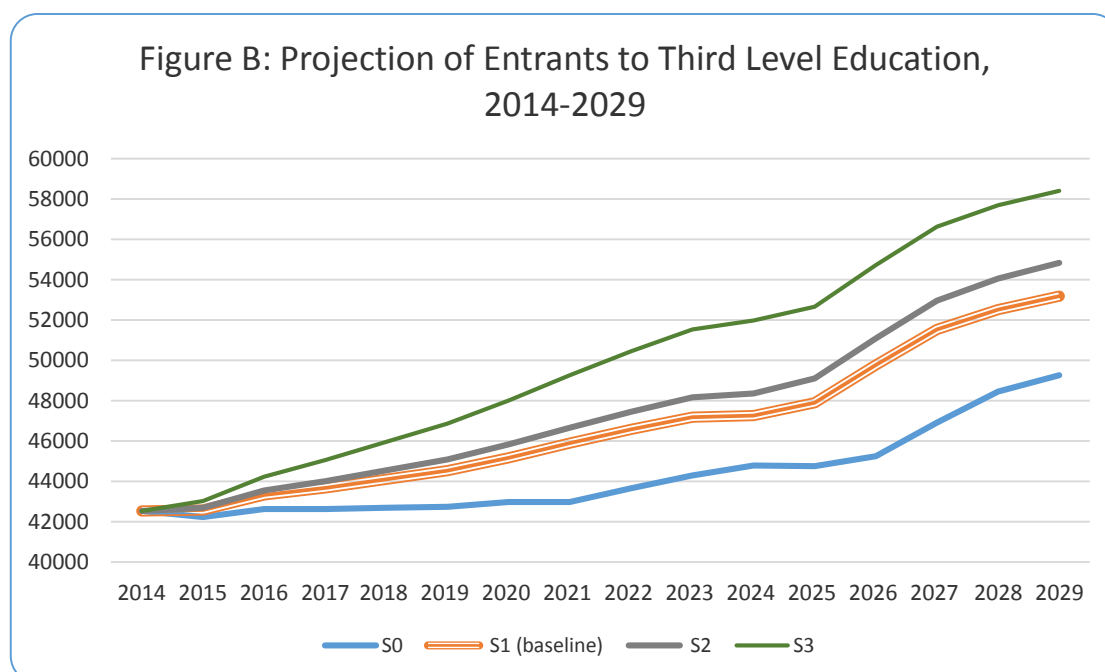
It should be noted that there is some overlap between mature and international entrants (i.e. there are some international entrants that are also aged over 23). For the purposes of this model international entrants are therefore counted as those aged under 23 only, in order to avoid double counting.

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5.1.3 Projections of New Entrants to Third Level, 2015-2029

Based on the factors considered above, the following Table shows the projected third level entrants under each scenario, S0 to S3.

Table 2: Projected New Entrants to Third Level, 2015-2029

YEAR	S0	S1 (baseline)	S2	S3
2014	42542	42542	42542	42542
2015	42239	42577	42687	43025
2016	42638	43329	43548	44240
2017	42638	43685	44014	45062
2018	42696	44110	44548	45962
2019	42747	44535	45083	46872
2020	42987	45171	45829	48013
2021	42987	45895	46662	49261
2022	43667	46582	47459	50461
2023	44293	47189	48176	51527
2024	44792	47259	48355	51977
2025	44755	47894	49100	52666
2026	45250	49769	51085	54718
2027	46910	51528	52953	56632
2028	48452	52521	54056	57684
2029	49257	53188	54833	58397

Figure B: Projection of Entrants to Third Level Education, 2014-2029

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Under all scenarios, the numbers entering third level are projected to rise continuously between 2015 and 2029. This is a direct result of the underlying demographic profile of the population.

5.2 Rate of Undergraduate Turnover (ROUT)

In addition to projecting the number of entrants, a projection needs to be made of the likely level of continuing enrolments. The rate of undergraduate turnover is the proportion of total Higher Education undergraduate enrolment which is "turned over" into the following academic year. It is calculated as follows:

Rate of Undergraduate Turnover = ROUT = (Stock $^{t+1}$ – Entrants $^{t+1}$) / Stock ^{t}

Where

Stock ^{t} = total enrolment in full time undergraduate courses at Higher Education in year T

Stock $^{t+1}$ = total enrolment in full time undergraduate courses at Higher Education in year T+1

And *Entrants $^{t+1}$* = total intake to full time undergraduate courses at Higher Education in year T+1

This measure gives an indication of those who continue each year in higher education. If one takes the total stock enrolment in one year, then those remaining the following year are those that have not either graduated, or dropped out of college. Although no analysis is made of the proportion of graduates and dropouts each year, the ROUT gives an implied figure for combined turnover in the sector year-on-year due to both graduation and dropout.

As an example, from 2013/2014 to 2014/2015 academic year, the ROUT is calculated as follows:

Stock 2014:	*147,765*
Entrants 2014:	*42,542*
Stock 2013:	*144,269*
ROUT =	*(147,765 – 42,542) / 144,269*

This gives a rate for the sector as a whole of just over 72.9%. As the ROUT can show some volatility year on year, an average ROUT figure of **71.98%** based on the previous two years data is carried throughout the model.

5.3 Postgraduate Enrolments

The final component in the third level projections model is a projection of postgraduate enrolments as a proportion of total full time enrolment.

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In recent years there has been a gradual decrease in the proportion of postgraduate enrolments from a peak of 14.5% in 2009. The most recent data available from the HEA shows that for 2014/2015, postgraduate enrolments represented just under 13% of all full time third level enrolments. This figure of 13.0% is carried throughout the model.

Appendix A: Comparison with previous projections

The 2014 projections were varied by scenario based on migration assumptions, whereas the 2015 scenarios vary based on changes to the components that make up entry to third level education. Therefore the projections are not fully compatible. The 2015 projections are slightly lower for the baseline scenario S1 than was projected for the Department's preferred scenario (M2) in the 2014 projections, as can be seen in Table 3 below. This is mainly due to the fact that the Department's baseline scenario for 2015 (S1) assumed no increase in any of the components of demand, whereas the Department's M2 scenario in 2014 assumed increases in migration, mature and international students.

However it is clear that, whichever scenario is chosen, demand is almost certainly going to continue to rise year-on-year between 2015 and 2029, given underlying demographic factors.

Table 3: *Comparison with 2014 projections*

	2014 published (M2)	2015 projections (S1)
2015	171185	170890
2016	173945	172716
2017	176165	174439
2018	177922	176166
2019	179840	177897
2020	182277	179873
2021	185057	182125
2022	187881	184535
2023	190181	186966
2024	192886	188796
2025	197165	190841
2026	202223	194465
2027	207151	199092
2028	211709	203562

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