The Economic and Social Review, Vol. 50, No. 3, Autumn 2019, pp. 557-585

POLICY PAPER

Evaluating Post Leaving Certificate Provision in Ireland

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Abstract: This paper summarises the key findings of an evaluation of the Post Leaving Certificate (PLC) Programme, the largest full-time further education (post-secondary non-tertiary) programme in Ireland. This programme has multiple purposes – preparing people for employment, acting as a bridge to higher education and serving as a second-chance route for adult learners. Based on evidence from both administrative data and a unique specially-designed learner survey, we find positive results for the estimated counterfactual impact of PLC provision on employment at 16 per cent relative to similar individuals who entered the labour market directly on completion of their (upper secondary) Leaving Certificate, with a corresponding positive estimate for transitions to higher education standing at 27 per cent. Nevertheless, the evaluation found that PLC courses were often poorly connected to the labour market and that reforms could further improve the labour market prospects of leavers.

Acknowledgements: This paper draws on a large-scale evaluation of PLC education in Ireland. We acknowledge the role of SOLAS in funding the study. The authors are solely responsible for the content and the views expressed.

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I INTRODUCTION

Post Leaving Certificate (PLC) courses represent the largest component of full-time further education and training provision in Ireland, with over 32,000 learners enrolled in such courses in 2015/2016 at an estimated direct cost of approximately €170 million per annum.[1] PLC courses serve a number of objectives, including vocational education and training for young people, second-chance education for older adults, and a progression route into higher education. Recent research on the further education and training sector as a whole highlighted concerns around its structures and responsiveness to labour market conditions, among other issues (McGuinness *et al*., 2014). The SOLAS FET Strategy (2014) subsequently pointed to the need for a stronger evidence base in order to inform future policy development in the sector. Despite its growing importance, the further education (FE) sector has not been subject to a good deal of policy analysis or empirical research. In contrast, there has been a much greater research focus on Higher Education, most likely reflecting its dramatic expansion. Therefore, the purpose of this paper is to focus on PLC Courses, the largest component of FE, that is, post-secondary education for people above school age, in Ireland.

This paper analyses administrative data sources and presents some of the key results emerging from a unique learners' survey that formed part of a recent formal evaluation of the Post Leaving Certificate (PLC) Programme (McGuinness *et al*., 2018).[2] Prior to the evaluation, there existed no comprehensive individual-level dataset on PLC provision and little was known regarding post-completion progression patterns or the extent to which these varied by student profile or PLC course type. The PLC learner survey was designed to fill this data gap and to capture detailed information at an individual level allowing a comprehensive analysis of learner outcomes. This includes multivariate estimates of the counterfactual impact of PLC provision relative to a number of comparison groups on a number of key pathways, such as employment and progression to higher education. Based on our findings, the paper makes a series of recommendations to improve the effectiveness and quality of PLC courses.

The paper is structured as follows: Section II provides a historical overview of the programme's development; Section III examines the patterns of PLC enrolments and provision using a combination of administrative and secondary data sources; Section IV presents the results from the learners' survey, including our assessment of the counterfactual impact of the programme on progression; finally conclusions and policy recommendations are discussed in Section V.

[1] Based on 2014 figures published by Solas (2014).
[2] This paper draws on a large-scale evaluation of PLC education in Ireland (McGuinness *et al*., 2018).

II HISTORICAL CONTEXT

Ireland faced a late development of vocational education, mostly related to delayed industrialisation, the low status of manual work and the importance of Church-run schools on providing an academic education (Coolahan, 1981). Despite some technical education initiatives in the early part of the twentieth century, the main structure for vocational education and training (VET) was provided by the 1930 Vocational Education Act which established 38 regionally-based Vocational Educational Committees (VECs) whose schools provided two-year full-time courses ("continuation education") designed to prepare young people for the labour market, along with evening courses ("technical education") designed originally to improve the practical skills of the employed.

The European Economic Community (EEC) was very significant in shaping vocational education and training in Ireland (Coolahan, 1981; O'Sullivan, 2005). Furthermore, the European Social Fund (ESF) provided funding for the formation of pre-employment courses in over 120 schools in 1977. These courses aimed to provide social, general and technical education combined with work experience and were targeted at post-lower secondary students. Initially, they were confined to vocational and community/comprehensive schools but were redeveloped as Vocational Preparation and Training (VPT) courses, VPT1 and VPT2, in 1984 and extended to voluntary secondary schools (NESC, 1993). These programmes consisted of vocational studies, work experience and general studies. In 1985, a second year was added to the courses and it was at this point that these VPT2 courses became commonly known as Post Leaving Certificate (PLC) courses. These courses were designed to provide vocational education in order to facilitate young people's transition to employment.

In the Irish context, the further education and training (FET) sector has expanded to serve multiple roles: as a channel for vocational skill acquisition, as a gateway on to higher education for more disadvantaged groups, and as second-chance education for adult learners. This multiplicity of roles is not unique, with a large share of the international literature discussing competing goals and obscure boundaries between FET and other forms of provision (see, for example, Gallacher, 2006). In terms of the current overall organisation structure, SOLAS was established in 2013 and is responsible for co-ordination and oversight of the sector while the Education and Training Boards (ETBs) have overall responsibility for FET provision at a regional level. In 2017, SOLAS estimate that approximately 323,308 learners will participate in over 30,000 FET programmes with an estimated total annual budget allocation of €638 million (SOLAS, 2017). However, Bergin *et al*. (2019) highlight that FET makes up just 7 per cent of the total education budget (current and capital) and, despite an increase in places, has been dwarfed by the dramatic expansion of higher education over the last 20 years. In relation to the apprenticeship model, the scale is currently small at 3 per cent of total FET

provision in 2017. However, the way in which apprenticeship training and education is being provided in Ireland is evolving and broadening.

In comparison with the German, Dutch and Australian systems, FET in Ireland is much more fragmented and is less focused around vocational labour market demand (Hannan *et al*., 1998; McGuinness *et al*., 2014). A diverse range of courses and programmes are offered through various providers, mostly provided by the regional Education and Training Boards (ETBs) who offer over 30,000 courses across 28 different course titles. The most significant full-time FET programmes provided by the ETBs are the Post Leaving Certificate (PLC), Vocational Training Opportunities Scheme (VTOS) and Youthreach programmes. The PLC courses are mostly provided in vocational schools with some provision in voluntary secondary and community and comprehensive schools and generally lead to Major FETAC awards made by Quality and Qualifications Ireland (QQI) at NFQ Level 5 or NFQ Level 6. In 2014, PLC learners covered a wide range of ages but the majority of learners were within the 16-22 year old cohort (64 per cent) with a large proportion of mature learners aged 23 or more (36 per cent).[3] PLC learners are disproportionately female, from less educated backgrounds, are more likely to be older and parents, and have greater Special Educational Needs (SEN) incidence than their counterparts enrolling in Higher Education (HE) (McGuinness *et al*., 2014).

The principal part-time programmes provided by the ETBs are the Back to Education Initiative (BTEI), Community Education, Adult Literacy, Intensive Tuition in Adult Basic Education (ITABE) and English for Speakers of Other Languages (ESOL). In 2017, a quarter of places are in full-time FE courses, over half (56 per cent) in part-time FE and a fifth in training. However, taking account of the intensity (hours) of provision (see McGuinness *et al*., 2014) changes the picture, with the majority of FTE enrolments (70 per cent) being in full-time programmes – predominantly PLCs – and part-time programmes accounting for only 30 per cent of all enrolments.

III EXISTING EVIDENCE BASE

The use of monitoring and evaluation is widely seen as a vital tool to ensure the continued improvement of effective programmes and the closure or reform of courses that fail to meet set objectives. To date, perhaps largely as a consequence of a combination of insufficient data and a lack of effective governance, there has been little evidence of monitoring or evaluation in the Irish FET sector. Furthermore, with the limited monitoring data that do exist, there is sparse evidence

[3] Details of PLC enrolments for 2014 by age were received by the authors directly from the Department of Education and Skills via email (February 4, 2019).

that the data have been used systematically to inform policy or influence the nature of provision.[4] In contrast, monitoring and evaluation in Germany, Australia and the Netherlands is much more systematic in providing an evidence base for the further development and progress of FET (McGuinness *et al*., 2014). These countries all have long-standing governance and support institutions that provide the intelligence and direction required to ensure the continued evolution of provision remains in line with economic and labour market development. Raffe and Byrne (2006) suggests that there are "policy learning" opportunities by considering what is working in other countries and what opportunities there might be to adapt policy and practice in light of this learning.

The availability of appropriate data is a necessary condition for effective monitoring and evaluation. The data infrastructure for FET in Ireland is improving but it is clear that it is well below that of other EU countries. The necessity to conduct a large-scale survey to generate estimates of the required variables for this analysis is one such example. This is in contrast to the Netherlands, where the main data source on students is the Basisregister Onderwijs (BRON) ("basic register for education"), in which all students are registered. This register is managed by the Ministry of Education, Culture and Science. The data consist of the entire school history of each student (i.e. which study programme in which school, when diplomas were obtained, etc.). The BRON can also be linked to other register data, so that background variables like age, gender and residence can be identified and incorporated. It is also well recognised that Germany and Australia have strong administrative data systems[5] which are augmented by high quality datasets, many of which are longitudinal in nature.[6]

Gallacher and Reeve (2019) identify one of the most compelling challenges for further education across the world. Broadly, three main roles currently exist for further education: (i) the provision of vocational/general education and training; (ii) promoting social inclusion and (iii) progression to higher education. The relative emphasis placed on each of these roles has differed both across countries and over time. These developments have been largely shaped by wider changes in the economy and wider society (e.g. the changing nature of work and the growth of mass higher education). Gallacher and Reeve (2019) indicate that tensions can exist between the main roles for further education and Bergin *et al*. (2019) outline that this is also accurate in the context of Ireland. It should be noted that each FET

[4] An exception is apprenticeships, which are demand-led, and the volume of provision is dictated by employers; therefore provision is informed by labour market requirements.

[5] Such as those managed by the Federal Statistical Bureau and Statistical Offices of the Lander in Germany.

[6] In Australia, the Longitudinal Survey of Australian Youth (LSAY) is the most widely used dataset in terms of assessing and monitoring VET performance. LSAY, which is based on a representative sample, tracks young people as they move from school into further study, work and other destinations. In addition to information on academic achievement, labour market status etc., the LSAY data contain a wide variety of control variables on students ranging from socio-economic background to aspirations. Respondents enter the survey at age 15 and are tracked for a subsequent nine years.

system has evolved to reflect differing goals, needs and contexts and, consequently, cross-country variation in the structure and nature of FET is not necessarily evidence of inferior provision. Nevertheless, the historic lack of any governance or planning function within Irish FET will certainly have meant that the Irish system has been relatively less well equipped to respond to national priorities.

The PLC sector has not been subject to a good deal of policy analysis or empirical research despite its growing importance. Hannan *et al*. (1998) raised issues of fragmentation and rigidity in the system of vocational education in Ireland. The authors argued for more strategic concentration on PLC level growth in a restricted range of subjects, in particular, to address the heterogeneous regional coverage of short cycle third-level provision. The authors also noted the development of Institutes of Technology (IOTs) in shifting away from shorter certificate and diploma courses designed to provide middle-level technical skills for regional labour markets, towards more degree-level delivery (a process termed "academic drift"), which was likely to make PLC providers even more critical as a source of vocational labour.

To address the information gap, the then Department of Education and Science commissioned a review of provision, which became known as the "McIver Report" (McIver Consulting, 2003). Based on a survey of providers and further consultation with stakeholders, this report pointed to considerable challenges for the sector given high levels of demand in the context of inadequate funding and facilities. The continued operation of PLC provision within the second-level system was seen as posing particular challenges in securing greater status for, and recognition of, the sector. The recommendations of this report were not implemented.

The McIver Report had mainly focused on institutional factors but subsequent research by Hannan *et al*. (2003) and Watson *et al.* (2006) provided additional evidence on learner experiences and outcomes. These studies highlighted the growing importance of the sector as a pathway to second-chance education for adult learners. The results showed that those who participated in PLC courses were less likely to be unemployed one year after completion of the course compared to those who entered the labour market directly after completing their Leaving Certificate (Watson *et al*., 2006). PLC participants were also found to be in higher status jobs than Leaving Certificate leavers five to six years after completion of the programme (Hannan *et al*., 2003). In contrast to the positive employment effects, during this time, participants in PLC courses were less likely to progress to further study than other school leavers of similar characteristics (in terms of age, gender, Leaving Certificate performance and social background). In other words, PLC courses were found to be an alternative, rather than a route, to third-level education. In the period that followed, higher education participation continued to expand significantly, with higher education now the main post-school pathway among school leavers in Ireland. This pattern of progression has important consequences for how PLC provision is perceived, especially in terms of its relative status in relation to higher

education. Most recently, the Leaving School in Ireland study (McCoy *et al*., 2014) highlighted high levels of regret among school leavers progressing to PLC courses, with such courses seen as a compromise rather than a specific goal.

IV DATA AND METHODOLOGY

This paper summarises the key findings of a formal evaluation of Ireland's Post Leaving Certificate (PLC) programme. This paper relies chiefly on two research strands: (i) desk-based analysis and (ii) a survey of learners.[7] Workshops with key stakeholders and a survey of PLC principals were also organised to supplement the analysis (McGuinness *et al*., 2018). However, the main evaluation evidence on the impact and effectiveness of PLC provision is based around data collected from the comprehensive survey of learners.

4.1 Survey Design

The objective of the survey was to collect information on school leavers (including PLC leavers) which allowed a sufficient period of time to elapse between leaving school and the survey in order to enable the short-run effects of PLC participation to be observed on labour market outcomes relative to a control group and individuals who followed other pathways. The survey samples were drawn from the Department of Education and Skills (DES) Post-Primary Pupil Database (PPPDB), following the methodology established for the 2006 and 2007 School Leavers' Surveys (SLSs) (McCoy *et al*., 2007). The PPPDB lists all pupils in the second-level system in Ireland which also includes the Post Leaving Certificate sector. For the purposes of the sample, a school (or PLC) leaver was classified as someone who left full-time education in an official secondary, vocational, community or comprehensive school over the course of the preceding academic year.

Our research strategy was to complete a leavers' survey with two groups: Leaving Certificate leavers (who left their courses in 2009) and PLC leavers (who left their courses in 2010). Leaving Certificate leavers include those who studied for the Leaving Certificate Applied and the Leaving Certificate Vocational Programme, as well as the established Leaving Certificate. The sample was obtained with the assistance of the Department of Education and Skills (DES). Leaving Certificate leavers were identified by finding students in the final year (sixth year) of the Leaving Certificate Programme in 2009 (including the established Leaving Cert, LCA and LCVP) who were not in the PPPDB in 2010 (i.e. not repeating LC and not in a PLC programme). PLC Leavers were classified by finding those who were in a PLC programme in 2010 and not in the PPPDB in 2011 (left the PLC

[7] Throughout the report, we use the terms 'learner' and 'leaver' interchangeably.

programme, either having completed or before completing the PLC course).[8] The year difference between the LC and PLC sample was to ensure that both samples were drawn from approximately the same cohort i.e. many individuals attaining the LC in 2009 would have gone on to obtain a PLC in 2010.

In this study, a multimode approach to the fieldwork was undertaken. The survey proposed respondents with the option to complete the questionnaire by web, by post, by telephone or through face-to-face contact with an interviewer.[9] A proxy questionnaire was developed with a reduced subset of questions, which could be completed by a relative if the original respondent was not available. The survey ran from September 2015 to February 2016. In total, 4,730 questionnaires were issued with 1,220 successful responses. Of the 1,220 responses, 427 were completed by proxy and these proxy responses were evenly dispersed across the Leaving Certificate (upper secondary) and PLC categories.[10] The survey response rate was 26 per cent, reflecting difficulties experienced during the fieldwork.[11] A lower than expected response rate was attributable to a number of factors including: (a) migration, (b) the duration of time that had lapsed since school completion, and (c) imprecise address information on the register. The duration of time between leaving the course and interview for the Leaving Certificate Leavers was seven years and for the PLC leavers was six years. This meant that a relatively high proportion of the addresses issued were no longer valid. In order to ensure the representativeness of the data and our subsequent analysis, the captured data were weighted on the basis of gender, programme type and, for the PLC leavers, whether they were under or over 25 at the time of leaving.[12]

4.2 Econometric Technique used for the Counterfactual Evaluation

In Section IV, we measure the impact of PLC participation on progression to employment and progression to HE. In order to examine this we adopt econometric techniques that, for example, compare the probability that PLC leavers are more

[8] We selected a stratified random sample with stratification based on gender, programme type (LC, LCVP, LCA, PLC) and, for the PLC students, whether they were under or over age 25 on leaving the programme. The sampling fraction differed by these stratification groups, with PLC leavers and LCA leavers oversampled.

[9] See McGuinness *et al.* (2018) for a copy of the complete survey. A pilot survey was undertaken to ensure the questionnaire was clear and that it achieved these objectives.

[10] Proxy respondents, such as parents or relatives, were used as suitable substitutes if they could adequately represent the 'leaver' by answering a reduced number of key questions from the survey.

[11] This 26 per cent response rate can be broken down into 17 per cent for the non-proxy survey and a 9 per cent for the proxy survey.

[12] The weights reflect differences in the sampling fraction and differences in response rate. Since LCA leavers are overrepresented in the sample (8 per cent) relative to their numbers in the population (3 per cent), for instance, the weight has the effect of reducing their representation in results based on the weighted data to reflect the population distribution. The weighted data were checked to ensure that the completed sample distributions matched the population distributions by school type attended and by whether the school was DEIS or non-DEIS. For more information, please see Appendix B in McGuinness et al. (2018).

likely to be in employment in 2012 and 2015 relative to Leaving Certificate students who entered the labour market or HE directly after controlling for a range of other factors.

An issue that arises in estimating the counterfactual and relativities with respect to other forms of treatment, is that individuals are likely to self-select into numerous education choices, with this self-selection likely to be highly conditional on Leaving Certificate points. This implies that estimates generated within a standard multivariate framework may not generate consistent results. For instance, PLC entrants have much lower concentrations in the 400-600 Leaving Certificate points range compared to those entering HE directly. Conversely, PLC entrants have a Leaving Certificate profile that is much more similar to Leaving Certificate students who entered the labour market directly. To overcome any potential bias related to self-selection into different routes we adopt propensity score matching (PSM) techniques, which ensure that the outcomes of the treatment group will be compared to those of the control group (and those undertaking other treatment) on a like-for-like basis. The propensity score, is defined as the conditional probability of receiving a treatment given certain determining characteristics:

$$p(X) = Pr\{D = 1|X\} = E\{D|X\} \quad (1)$$

where D is a binary term indicating exposure to the treatment, in this case participation in PLC education, and X is a vector of determining characteristics. In the second stage of the PSM estimation procedure, individuals in the treatment group are "matched" with counterparts in the control group (direct labour market entrants or leavers who went directly to HE) that have comparable propensity scores and their actual outcomes (employment or progression to HE) are compared. Rosenbaum and Rubin (1983) show that matching individuals on the basis of propensity scores is equivalent to matching on actual characteristics. In order to ensure that our PSM estimates are as reliable as possible we apply a caliper approach to the Kernel algorithm to ensure that, at the point of estimation, all observable differences between the control and treatment groups are fully eliminated. Furthermore, the first stage of the PSM estimation procedure is informative in itself, as it reveals the key characteristics that distinguish PLC students from those of the specific control groups (direct entrants to the labour market and HE).

V EVIDENCE FROM ADMINISTRATIVE AND SECONDARY DATA SOURCES

This section draws on existing data to examine the patterns of PLC enrolments and provision. The research aims here are two-fold. First, we want to analyse the distribution of enrolments over the recent business cycle, by region, field of study

and county deprivation level. Second, we examine the alignment of PLC subject areas to the structure of labour market demand.

5.1 Distribution of PLC Provision

Contextual information on the size and composition of PLC provision in Ireland is available from the Department of Education and Skills (DES) enrolments data. The enrolments data are analysed separately at two time points, 2008/2009 and 2011/2012. While these time points partially reflect data accessibility, they also relate to different points in the economic cycle. The information from 2008/2009 relates to the height of the crisis period and 2011/2012 the beginning of the recovery period. The two time points pre-date the establishment of SOLAS in 2013 whose main goal is to strengthen the FET sector. Table 1 shows the distribution of PLC awards by awarding bodies (FETAC and Non-FETAC). Total enrolments grew by just over 4,000 (13 per cent) between 2008/2009 and 2011/2012, with the enrolment increase mostly related to a growth in FETAC enrolments. Non-FETAC enrolments, which include City and Guilds, EDEXCEL, etc., grew marginally over the period; however, their total share declined from 18 per cent to 16 per cent.

We next examine the distribution of FETAC PLC places at a county level. The distribution is calculated as the share of total enrolments divided by population share at county level. As PLC provision encompasses vocational education for young people and also second-chance education for older learners, the full population is the appropriate reference group.[13] This allows us to measure the extent to which PLC enrolments lie above or below the estimated level given the county's population. Specifically, a ratio greater than 1 indicates a higher density of enrolments relative to what might be projected for the given population. Table 2 suggests that there is a substantial amount of heterogeneity in the regional distribution of PLC places. For instance in 2008/2009, the number of PLC places in Offaly is approximately 12 per cent of what might be projected given the population; on the contrary, in Sligo, Carlow and Cavan it is at least double the expected level based on their respective populations. There was some change in the geographical distribution of places between 2008/2009 and 2011/2012, specifically the ratio for Longford, Laois, Kilkenny and Leitrim increased considerably, while the largest falls were experienced in Monaghan and Wexford. It is uncertain what drove the movements between 2008 and 2011; however, one would assume they are primarily related to the opening and closure of colleges or courses rather than population changes.

It is not clear what influences the wide variation in the distribution of PLC places shown in Table 2. Variations could be related to national policy, for example, where places have been assigned to areas of high levels of unemployment or social

[13] In 2014, PLC learners covered a wide range of ages but the majority of learners were within the 16-22 year old cohort (64 per cent) with a large proportion of mature learners aged 23 or more (36 per cent).

disadvantage. Alternatively, the variations could reflect legacy effects, i.e. places exist in areas where they have always existed. McGuinness *et al*. (2014) concluded, for the FET sector in general, that highly dispersed patterns of provision largely reflected legacy issues.[14] This appears to also hold for the PLC sector, as Figure 1 shows there is no relationship between the county-level PLC enrolment ratio and the level of deprivation.[15] This is potentially problematic from a policy perspective as it demonstrates that young people from disadvantaged regions, who have the highest risk of unemployment, do not have higher than average access to PLC programmes.

Table 1: PLC Provision (FETAC and NON-FETAC Awards)

	Freq.	*%*	*Freq.*	*%*
FETAC	26,552	82.3	30,423	83.6
Non-FETAC	5,716	17.7	5,973	16.4
Total	32,268	100.0	36,393	100.0

Source: Authors' own estimates based on DES Enrolments Data.

Table 2: Distribution of FETAC PLC Places

#	*PLC County*	*Ratio 2008-2009*	*Ratio 2011-2012*	*Change +/-*
1	Carlow	2.58	2.44	–0.14
2	Cavan	2.42	2.48	+0.06
3	Clare	0.28	0.35	+0.07
4	Cork	1.43	1.47	+0.04
5	Donegal	0.17	0.20	+0.03
6	Dublin	1.09	1.07	–0.02
7	Galway	1.12	1.16	+0.04
8	Kerry	0.71	0.63	–0.08
9	Kildare	0.24	0.36	+0.12
10	Kilkenny	0.70	0.92	+0.22
11	Laois	0.75	1.04	+0.29

[14] The Further Education and Training Strategy 2014-2019 (Solas, 2014) provides a framework aiming to address the substantial amount of heterogeneity with respect to the patterns of provision and facilitate the engagement between regional employers and education and training providers to ensure that the supply of skills is adequate to meet the needs of the local labour markets.

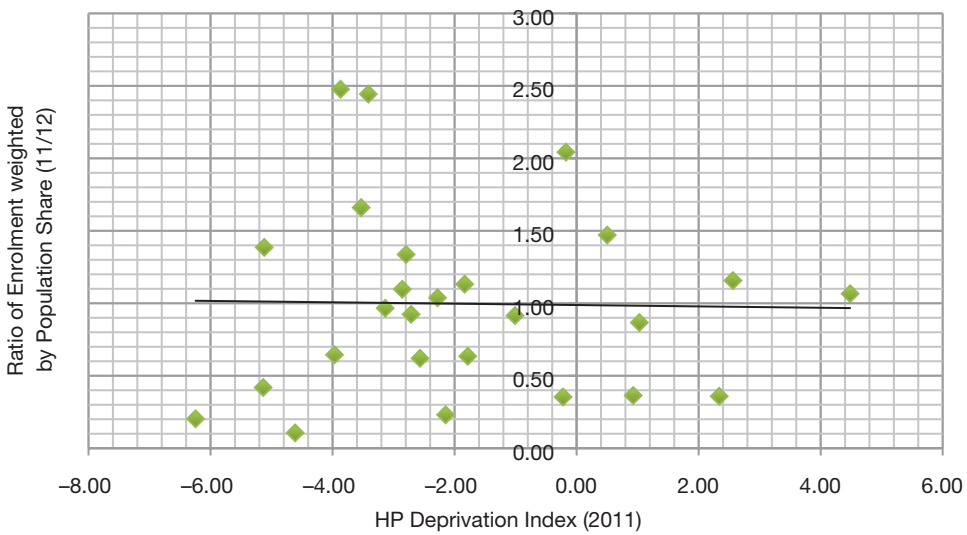
[15] The Pobal Haase Pratchke (HP) Deprivation Index used here is a method of measuring the relative affluence or disadvantage of a particular geographical (county) area using data compiled from various censuses. A scoring is given to the area based on a national average of zero and ranging from approximately -10 (being the most disadvantaged) to +10 (being the most affluent). In addition to this, the index uses percentage data for the area given under the following categories: Population Change; Age Dependency Ratio; Lone Parent Ratio; Primary Education Only; Third-Level Education; Unemployment Rate (male and female); Proportion living in Local Authority Rented Housing.

Table 2: Distribution of FETAC PLC Places (Contd.)

#	*PLC County*	*Ratio 2008-2009*	*Ratio 2011-2012*	*Change +/-*
12	Leitrim	0.41	0.62	+0.21
13	Limerick	1.21	1.10	–0.11
14	Longford	1.00	1.39	+0.39
15	Louth	1.56	1.66	+0.10
16	Mayo	0.86	0.97	+0.11
17	Meath	0.44	0.36	–0.08
18	Monaghan	1.15	0.64	–0.51
19	Offaly	0.12	0.11	–0.01
20	Roscommon	0.20	0.23	+0.03
21	Sligo	2.20	2.04	–0.16
22	Tipperary	0.89	0.92	+0.03
23	Waterford	1.19	1.34	+0.15
24	Westmeath	1.13	1.13	0.00
25	Wexford	0.80	0.42	–0.38
26	Wicklow	0.88	0.87	–0.01
–	Total	1.00	1.00	

Source: Authors' own estimates based on DES Enrolments Data and CSO Population Data.

Figure 1: How does the Ratio of Enrolments vary compared to the HP Deprivation Index (2011/2012)?



Sources: Authors' own estimates based on DES Enrolments Data, CSO Population Data and the Haase Pratchke (HP) Index.

We next attempt to assess the degree to which PLC programmes are distributed by field of study and how these fields associate with the structure of the labour market. The rationale for this approach is that the conditions of approval for PLC programmes explicitly state that programmes must be labour market relevant[16] or have a progression element. Table 3 aggregates the enrolments data for 2008 and 2011 using the field of study groupings adopted by the Irish Central Statistics Office (CSO). Enrolments in Education, Social Sciences, Business, Law and General Programmes account for between 50 and 60 per cent of overall enrolments in both periods. Agriculture, Veterinary, Health and Welfare are typically almost 20 per cent of enrolments, while enrolments in service sector subjects account for approximately 15 per cent of the total. Finally, Science, Maths, Computing, Engineering, Manufacturing and Construction account for the smallest share at about 10 per cent of the total. The relative proportion in each broad subject area appears to have remained relatively stable over the period from 2008 and 2011, despite the labour market undergoing a significant economic shock which affected both the level and composition of labour demand. During this time period the unemployment rate increased severely from 6 per cent to just under 15 per cent. However, the composition of PLC provision remained relatively stable, with the level of enrolments increasing during a period in which both the level and composition[17] of labour market demand had changed dramatically. The data suggest that, contrary to what is implied by the "Conditions of Approval" for PLC provision, the supply of places does not appear to be very responsive to changing labour market conditions and shocks.[18]

Table 4 provides a greater level of information on the courses with the largest enrolments by broad course area in descending order in 2011/2012. For instance, the largest number of enrolments was in Early Childhood Care and Education, which would be categorised under Education, Social Sciences, Business, Law (Number 2) in Table 3. The nine broad course areas listed below account for almost half of all enrolments during 2011/2012.[19] This gives us an indication of the composition of new (the inflow) labour supply at the sub-degree level.

[16] The Conditions of Approval state "the Post Leaving Certificate (PLC) programme is a self-contained whole-time learning experience designed to provide successful participants with specific vocational skills to enhance their prospects of securing lasting, full-time employment or progression to other studies". Course approval does not carry forward from year to year. Providers submit all courses they intend to run for approval regardless of whether they have previously been approved.

[17] The Great Recession had a dramatic effect on employment in all sectors, but the largest employment losses were in Construction and Services (Bergin *et al.*, 2012).

[18] The PLC conditions of approval (DES, 2012) include "In approving courses the Department has regard to ensuring appropriate provision on a geographic basis" and "Providers must include a Labour Market Justification (LMJ) with applications for all new courses, showing: (i) How the course provision meets with Government policy; (ii) What particular skill gaps or areas of skills growth, both locally and nationally, the course will address; and (iii) Specific data and information on progression options, local agreements with employers, information on outcomes for previous learners.

[19] Due to CSO restrictions we do not report the exact figures related to the calculations of the numbers underpinning Table 5 and consequently we are unable to report actual enrolment figures in Table 4.

Table 3: PLC FETAC Courses by Broad Subject Area

# Broad Subject Area	*PLC FETAC COURSES*	*Enrolments 2008/2009 (%)*	*Enrolments 2011/2012 (%)*
1	General Programmes or Humanities and Arts	19	19
2	Education, Social Sciences, Business, Law	41	33
3	Science, Maths, Computing, Engineering, Manufacturing, Construction	9	12
4	Agriculture, Veterinary, Health and Welfare	17	18
5	Services (e.g. Hairdressing, Fitness)	14	17
	TOTAL	100	100
	#	26,552	30,423

Source: Authors' own estimates based on DES Enrolments Data and CSO Population Data.

Table 4: PLC FETAC Courses with the Largest Enrolments across Broad Subject Areas in 2011/2012

# Broad Subject Area	*PLC FETAC COURSES 2011/2012 – (QQI Award Titles)*
2	Early Childhood Care and Education
5	Sport and Recreation
2	Business Studies
4	Nursing Studies
4	Community and Health Services
2	Office Administration
5	Hairdressing
1	Art
3	Information Technology

Source: Authors' own calculations based on DES Enrolments Data.
Notes: Courses are listed in descending order of enrolments.
The numbers refer to the broad subject areas from Table 3 i.e. (1) General Programmes or Humanities and Arts; (2) Education, Social Sciences, Business, Law; (3) Science, Maths, Computing, Engineering, Manufacturing, Construction; (4) Agriculture, Veterinary, Health and Welfare; and (5) Services.

5.2 Alignment of PLC Subject Areas to the Structure of Labour Market Demand

In order to approximate the composition of demand for newly qualified[20] vocational labour for workers aged 15 to 24 years, we use the Quarterly National Household Survey (QNHS) to identify occupations where the majority of workers are educated

[20] We restrict the analysis to individuals aged 15-24 as this will represent the overwhelming majority of individuals qualifying over this period.

to a sub-degree level. In summary, we measure the number of employees within the QNHS in each sector that qualified in the previous 12 months with a qualification of Leaving Certificate and below degree level who commenced their job with their existing employer in the previous year. This approach will give us a broad estimate of the number of jobs likely to be accessible for newly qualified young people within specific occupations. According to Table 5, almost 60 per cent of positions available to new entrants with vocational qualifications are in the sales and service occupations (Table 5, items classified as 1 to 6). The largest individual components of demand are in retail and account for almost 30 per cent of the total. Waiters/waitresses account for a further 12.5 per cent. This information would suggest that the demand for newly qualified labour in construction and manufacturing was quite low in 2012. However, it is uncertain to what extent this is a cyclical or permanent effect.

In Table 6, we map the number of enrolments in the largest components of PLC provision that have a direct labour market orientation and limited progression element at individual course level[21] against the estimated number of jobs among young people in occupations identifiable to these categories.[22] The results clearly specify that the annual enrolment levels greatly surpass the number of jobs likely to be available for completers in each given area in any one year. For instance, the ratio of places to jobs in Hairdressing is estimated to be 2.1 increasing to 3.9 for Community and Health Services and 4.0 for Early Childhood Care and Education. This provides additional evidence that the sector generally is poorly connected to labour market needs, and much more needs to be done to guarantee that course provision is both reflective of and responsive to labour demand, specifically for newly qualified vocational labour.

Table 5: QNHS Sub-Degree Occupations

Detailed Occupation		*Per cent*
1	Sales and retail assistants, cashiers and checkout operators	28.9
2	Waiters and waitresses	12.5
3	Childminders and related occupations	5.7
4	Bar staff	5.3
5	Hairdressers, barbers, beauticians and related occupations	3.6

[21] Specifically, we use course information to distinguish between those who undertook labour market orientated PLC courses and non-labour market PLC courses. Labour market orientated courses are those that are directed at immediate employment opportunities (e.g. hair and beauty services) and although they may enable further study, they can be classified as job-specific in nature. Other programmes, typically those with more capacity for progression to further study (e.g. arts), that are not targeted at specific occupations are classified as general. All courses were coded using the CSO's Standard Fields of Education Classification at a three digit level. See McGuinness et al. (2018) for a full listing of job-specific and general fields of study.

[22] Based on the QNHS using the same approach as Table 5.

Table 5: QNHS Sub-Degree Occupations (Contd.)

	Detailed Occupation	*Per cent*
6	Cleaners and domestics	3.6
7	Kitchen and catering assistants	2.3
8	Care workers and home carers	2.2
9	Fishing and other elementary agriculture occupations	1.8
10	Elementary storage occupations	1.6
11	Food, drink and tobacco process operatives	1.6
12	Air travel assistants	1.4
13	Shelf fillers	1.3
14	Metal working production and maintenance fitters	1.3
15	Farmers	1.3
16	Other administrative occupations	1.3
17	Leisure and theme park attendants	1.2
18	Plumbers and heating and ventilating engineers	1.1
19	Electricians and electrical fitters	1.1
20	Elementary construction occupations	1.1
21	Receptionists	1.0
22	Construction operatives (NEC)	1.0
23	Housekeepers and related occupations	0.9
24	Sheet metal workers	0.8
25	IT user support technicians	0.7
26	Vehicle technicians, mechanics and electricians	0.7
27	Other	14.8
	Total	100.0

Source: Authors' own estimates based on QNHS, Q2 2012.
Notes: Derived using Quarterly National Household Survey Q2 2012 microdata (CSO). Individuals aged 15-24 who qualified in the last year (2011/2012) with a Leaving Certificate or PLC qualification, and who commenced their job with their current employer in the last year (2011 or 2012). NEC = Not elsewhere classified.

Table 6: Some Examples of Mapping DES Enrolments (Supply) with QNHS Data (Demand) for Courses with Limited Progression Components

#	*PLC FETAC COURSES (QQI Award Titles)*	*Estimated Ratio of Enrolments to QNHS Jobs*
2	Early Childhood Care and Education	4.0
4	Community and Health Services	3.9
5	Hairdressing	2.1

Source: Authors' own estimates based on QNHS Q2 2012.
Note: QNHS Occupations used for matching: childminders and related occupations, nursery nurses and assistants and play workers; care workers and home carers, nursing auxiliaries and assistants; hairdressers, barbers, beauticians and related occupations.

V RESULTS FROM THE LEARNERS' SURVEY

The main evaluation evidence on the effectiveness and impact of PLC provision is based around data collected from a comprehensive survey of learners.

Table 7 provides some descriptive statistics for PLC learners and for Leaving Certificate learners who did not proceed to take any further education courses. The Leaving Certificate grouping here consists of both individuals who entered the labour market directly and those who progressed directly to HE. Table 7 shows that the majority of PLC learners were female, were, on average, six years older than the Leaving Certificate group and were less likely to come from higher socio-economic groups.[23]

Table 7: All learners – Some Descriptive Statistics

	PLC	*LC (that did not take FE)*
% Female	62.9	48.2
Current Age (in years)	31.2	24.3
% whose mother's highest level of education is degree or higher	7.0	18.5
N	573	556

Source: Authors' own estimates based on PLC Learners' Survey, weighted data.
Note: LC excludes those who (i) report that they have subsequently taken a PLC course and/or (ii) who report their main status in any of Sept. 2010, Sept. 2012 and Sept. 2015 as studying a further education course.

Table 8 shows the distribution of Leaving Certificate points for the entire sample[24] and then independently for PLC students and the Leaving Certificate group[25] (that did not take FE). The majority (62 per cent) of PLC leavers are in the 200-400 points band class, while the majority of the Leaving Certificate group (63 per cent) are in the 300-500 band class. The difference in the distribution of points reflects the higher proportion of Leaving Certificate cohort who went directly to HE. The descriptive statistics on the profile of PLC students relative to other LC leavers are consistent with those produced by earlier, discontinued, School Leavers Surveys, corroborating the representativeness of our data.

[23] Socio-economic group position is based on mother's highest level of education (degree or higher).
[24] Of the 1,220 respondents to the survey, points data were available for 791 cases. Participants in the non-proxy survey were asked if their Leaving Certificate results could be accessed from the State Examinations Commission. This resulted in information for an additional 134 cases so, in total, points data were available for 998 respondents in the survey.
[25] Individuals from the group may have progressed directly to HE or the labour market.

Table 8: Points Data from Learners' Survey

Points Bands	*ALL*	*PLC*	*LC (that did not take FE)*
0-100	7.2	13.9	3.9
101-200	9.7	17.2	4.3
201-300	20.1	31.0	13.4
301-400	31.3	31.0	30.3
401-500	22.7	6.0	34.2
501-600	9.0	0.9	13.9
Total	100.0	100.0	100.0
#	998	421	500

Source: Authors' own estimates based on PLC Learners' Survey, weighted data.
Note: LC excludes those who (i) report that they have subsequently taken a PLC course and/or (ii) who report their main status in any of Sept. 2010, Sept. 2012 and Sept. 2015 as studying a further education course. These individuals are included in the calculation of the total ("All" column) in the table.

When asked about their main goal for undertaking a PLC programme, around 40 per cent of PLC learners responded their main objective was to progress to higher education, a similar percentage said their main goal was to get a job directly after the course and around 20 per cent stated personal development as their main objective. This contrasts with the views of PLC college principals who, in a separate survey, revealed that they saw PLC courses as providing a number of roles including progression to higher education, progression to employment, lifelong learning and social inclusion, with principals placing relatively equal weight on each aspect (McGuinness *et al*., 2018). It may be that principals view different courses in the college as serving different purposes. Alternatively, learners themselves may not be clear about the extent to which specific courses are oriented towards employment or higher education progression. Work experience was not found to be a universal feature of the PLC programmes, with just over 70 per cent of learners specifying that they undertook work experience during their PLC studies (McGuinness *et al*., 2018). This seems somewhat unusual given that work experience is a compulsory element of PLC courses.

As stated, a key aim of our study is to assess the impact of PLC participation on outcomes such as progression to higher education and employment. From a technical prospective, the counterfactual impact of PLC provision is only accurately measured relative to individuals who had access to a PLC programme, did not participate in it and received no further "treatment" (i.e. no other training or education exposure). Specifically, the counterfactual will be most precisely measured by comparing the outcomes of the PLC treatment group with the Leaving Certificate completers who entered the labour market on completion of their studies. Within this study, the direct labour market entrants shape the principal control group

against which the effectiveness of the PLC programme is evaluated. Nevertheless, while the direct labour market entrant forms the basis of a counterfactual estimate, comparisons between PLC participants and those undertaking other forms of treatments (e.g. directly to HE) are also informative and will be considered within this framework. We are predominantly interested in comparing the employment outcomes of PLC participants with those of similar individuals who progressed directly to HE following completion of their Leaving Certificate.[26]

In our assessment of the impact of the treatment, we explicitly identify the heterogeneous nature of PLC provision. Specifically, some programmes will be directly targeted at immediate employment opportunities and, as such, whilst such programmes also facilitate progression to further study they can be classified as "job specific" in nature. The remainder of programmes, while providing prospects for employment and further study, by virtue of the fact that they tend not to be targeted at specific occupations, we classify as "general". This distinction between "job specific" and "general" PLC provision is adopted for the vast bulk of our empirical estimates. However, in some cases satisfactory information was not provided or the course title did not easily lend itself to a specific field of study for our classification purposes. Table 9 describes the construction of the various treatment and control groups. After exclusions, 421 observations remain in the PLC treatment group and 500 in the LC control group, which we consider a highly workable sample.

Table 9: Treated and Control Groups – Definitions

	Numbers
Original Sample	1,220
Of Which:	
PLC	573
LC	647
Exclude cases where points data are not available:	
PLC	421
LC	577
Exclude LC Learners with PLC and/or FE exposure:i.e. those who (i) report that they have subsequently taken a PLC course and/or (ii) who report their main status in any of Sept. 2010, Sept. 2012 and Sept. 2015 as studying a further education course	
PLC – Treatment Group 'ALL PLC'	**421**
LC – Control Group 'ALL LC'	**500**

[26] It should be noted that as a consequence of difficulties in developing a comparison group for older PLC entrants and the fact that certain data such as points information is less complete for this group, that the counterfactual measure relates more closely to younger PLC participants who have completed the Leaving Certificate.

Table 9: Treated and Control Groups – Definitions (Contd.)

	Numbers
Exclude both PLC and LC Learners with other training exposure:i.e. those who report their main status in any of Sept. 2010, Sept. 2012 and Sept. 2015 as: 'Apprenticeship', 'Internship', 'Other FÁS/SOLAS, Fáilte Ireland, Teagasc course etc., and 'On a private training scheme'	
PLC	381
LC	464
Separate out LC Learners who went straight to HE: i.e. those who report their main status in Sept. 2010 to be HE	
PLC – **Treatment Group 'PLC'**	381
LC – Straight to HE – **Control Group 'HE LC'**	310
LC – Rest (Direct Entrants to Labour Market) – **Control Group 'LM LC'**	154
Distinguish between job specific and general PLCs: i.e. distinguish between those from treatment group 'PLC' who undertook PLC programmes in more labour market orientated fields of study with those who did not	
PLC – No detailed PLC course info provided	144
PLC – General – **Treatment Group 'General PLC'**	136
PLC – Job Specific – **Treatment Group 'JS PLC'**	101
LC – Straight to HE – **Control Group 'HE LC'**	310
LC – Rest (Direct Entrants to Labour Market) – **Control Group 'LM LC'**	154

Source: Authors' own calculations based on PLC Learners' Survey.
Note: LC excludes those who (i) report that they have subsequently taken a PLC course and/or (ii) who report their main status in any of Sept. 2010, Sept. 2012 and Sept. 2015 as studying a further education course.

Table 10 provides descriptive information on the treatment group and the LC group (who have not done FE). There are some clear dissimilarities between the two groupings suggesting that there exists a non-random self-selection process into PLC study. Specifically, the PLC participants are more likely to be female, older, and have a lower points score than those in the LC (non FE) group. With respect to labour market outcomes, while the PLC group are more likely to be in employment in 2012 and less likely to be in HE, the rates become much more comparable by the year 2015.[27]

[27] These differences reflect the fact that a high proportion of the LC group progressed to HE.

Table 10: Treated and Control Groups – Some Descriptive Statistics

	ALL PLC	*ALL LC Excluding LC learners with FE exposure*
Current age (years)	28.6	24.3
Proportion female (%)	65.2	48.9
Average points (00s)(banded; 1=0-100, 2=101-200 etc.)	3.0	4.3
% in employment in 2012	42.8	24.2
% in unemployment in 2012	10.4	6.3
% in higher education in 2012	27.0	59.8
% in employment in 2015	62.6	66.0
% in unemployment in 2015	13.6	9.3
% in higher education in 2015	7.1	14.2

Source: Authors' own estimates based on PLC Learners' Survey, weighted data.
Note: Employment refers to paid employment or self-employment; unemployment refers to unemployed but looking for work.

This broad pattern where PLC learners are more likely to be in employment and less likely to be in higher education in 2012 is more prominent when we distinguish between general and job specific PLCs. As shown in Table 11, for example, just under 36 per cent of those in general PLCs are in employment in 2012 as opposed to over 50 per cent of those in job specific PLCs, with females more likely to be in job specific PLC courses. By the year 2015, the percentages in employment and higher education in the different treatment and control groups are more comparable.[28]

[28] There are 573 PLC learners in the entire sample (see Table 9). Of these, 28 per cent were in employment and 19 per cent were in higher education in 2010, while the comparable figures for 2012 are 42 per cent and 24 per cent and the related figures for 2015 are 57 per cent and 7 per cent.

Table 11: Treated and Control Groups – Some Descriptive Statistics for 2012 and 2015

	PLC	*HE LC*	*LM LC*	*GEN PLC*	*JS PLC*
	PLCs	*LC direct to Higher Education*	*LC direct to Labour Market*	*General PLCs*	*Job Specific PLCs*
	Excluding learners with other training exposure				
Current age (years)	28.6	24.2	24.4	29.7	28.8
Proportion female (%)	67.0	53.1	41.3	60.8	85.5
Average points (00s)	3.0	4.7	3.4	3.0	3.0
% in employment in 2012	44.6	13.0	55.7	35.6	51.0
% in unemployment in 2012	11.5	5.2	10.6	12.5	7.0
% in higher education in 2012	28.3	80.7	12.6	36.9	22.0
% in employment in 2015	66.0	68.0	64.4	63.0	67.8
% in unemployment in 2015	13.6	8.3	11.7	16.3	6.5
% in higher education in 2015	7.2	17.9	6.0	11.0	6.5

Source: Authors' own calculations based on PLC Learners' Survey, weighted data.
Note: Employment refers to paid employment or self-employment; unemployment refers to unemployed but looking for work.

We subsequently measure the impact of PLC participation on progression to employment and progression to HE. In order to examine this we adopt econometric techniques that, for example, compare the likelihood that PLC leavers are more likely to be in employment in 2012 and 2015 relative to Leaving Certificate students who entered the labour market or HE directly, after controlling for a series of other factors.

As described in Section III, to overcome any potential bias related to self-selection into various routes, we adopt propensity score matching (PSM) techniques. This allows us to ensure that the outcomes of the treatment group are compared to those of the control group (and those undertaking other treatment) on a like-for-like basis. The stage one equations reveal that relative to Leaving Certificate students who entered the labour market directly, the probability of participating in PLC study (i.e. being in the treatment group) is positively associated with age, being female, having a lower points score[29] and not having taken the Leaving Certificate Applied programme.[30] Furthermore, a proxy for socio-

[29] This effect is only significant at the 10 per cent level.
[30] All of these factors are potentially correlated with the outcome variable (employment) which could lead to biased estimates of the treatment when estimated in conjunction with these controls in a standard multivariate model.

economic group (whether either or both of the individual's parents had a degree) was incorporated in the first stage regression but the effect was not significant. The stage one equation for participating in a PLC programme relative to Leaving Certificate students who went directly to higher education show comparable results with age, being female and having a lower points score, all being positive factors influencing an individual's likelihood of participating in a PLC programme.

Table 12 and Table 13 show the results for employment outcomes in 2015 relative to direct labour market entrants and then direct HE entrants.[31] The direct labour market entrant group is utilised to calculate the counterfactual estimate of PLC participation and the main result shows that by 2015 PLC participants were 16 percentage points more likely to be in employment relative to similar individuals who entered the labour market directly on completion of their Leaving Certificate in 2009.[32] Exploring this result in further detail, we find that the employment effects are larger for job specific than for general PLCs and for PLC participants who progressed directly to the labour market rather than to HE. Nevertheless, given that many of the PLC cohort who proceeded to HE will have undertaken general PLCs and were still completing their studies in 2015, these particular estimates cannot be taken as conclusive.

Regarding transitions to HE (Table 14), these are examined relative to the direct labour market entrants group only. PLC participants were 27 percentage points more likely, compared to the control group, to have participated in HE by 2015. Isolating the effects out by PLC type, we find that PLC students undertaking general and job specific PLCs were more likely than direct labour market entrants to have undertaken HE by 2015, by 38 and 26 percentage points respectively. The analysis shows that PLC provision acts as a crucial access platform to HE for individuals who might well have otherwise never followed that particular educational option.

Overall, the results show that PLC education had a strong positive influence on future labour market outcomes. In terms of our sample, almost 10 per cent of the PLC sample were in receipt of the Back to Education Allowance (BTEA), a non-statutory second-chance education scheme for job-seekers. BTEA beneficiaries

[31] Some results are available which indicate, on the basis of PSM estimates, that not surprisingly individuals pursuing general PLCs are somewhat less likely to be employed in 2012 relative to Leaving Certificate direct labour market entrants. Conversely, job specific PLCs, and to a lesser extent general PLCs, are somewhat more likely to be in employment in 2012 relative to direct HE entrants.

[32] We undertook a series of balancing tests to check the validity of our PSM results. These tests assess the extent to which individuals in the PLC treatment group were effectively matched with individuals in the LC control group across the range of observable characteristics that determine membership of the treatment group. These tests, for our key model of employment outcomes in 2015 relative to direct labour market entrants, are shown in Appendix Tables A.1 and A.2. The results show that the data are balanced, both in terms of the mean difference between observable characteristics across the treatment and control groups post-matching, and the failure of observable characteristics to explain entry to the treatment post-matching. As a further robustness check, we ran a series of alternative treatment effect models (such as teffects) in STATA. The estimated impacts are largely unchanged.

receive a weekly allowance while pursuing a second-level qualification (such as a PLC) or a third-level course. The BTEA scheme is Ireland's main active labour market programme for tackling unemployment and both the numbers participating and spending on this programme increased dramatically following the financial crisis in 2008 (see Kelly *et al*., 2015). A recent evaluation of the BTEA programme found that it had a substantial negative impact on participants' successive employment probabilities (Kelly *et al*., 2015), in contrast to the positive employment impacts associated with PLC participation in this paper. The Kelly *et al*. (2015) evaluation was purely quantitative and the authors could not draw any conclusions with respect to the extent to which the negative employment impact was being driven by issues such as the quality of education, the effectiveness of the activation process and/or other factors. Nonetheless, the results from Kelly *et al*. (2015) warrant that some additional checks should be undertaken regarding the performance of the BTEA cohort within this framework.

As a robustness check we re-estimate the PLC treatment effect excluding BTEA beneficiaries and we find that the estimated employment treatment effect in 2015 increases from 16 to 19 per cent. Relative to the control group, we find that the BTEA beneficiaries were 22 per cent less likely to be in employment in 2015. While the control group and time period being considered here are somewhat different from those used in the BTEA evaluation, the result is highly consistent with that study.[33] The results of this study further imply that the negative aspects of the BTEA programme are unlikely to be associated with the quality or nature of the educational aspect of delivery, given the highly positive employment impacts experienced by PLC participants not in receipt of the BTEA.

Table 12: Employed in 2015 – Estimated Impact Relative to Direct Labour Market Entrants

Treatment Group	*Control Group*	*Estimate*
All PLC	All LC	0.04
PLC	LC – direct LM entrants	0.16**
PLC who went to HE	LC – direct LM entrants	0.08
PLC who did not progress to HE	LC – direct LM entrants	0.23***
General PLCs	LC – direct LM entrants	0.09
Job Specific PLCs	LC – direct LM entrants	0.24**

Source: Authors' own estimates based on PLC Learners' Survey.
Note: Table shows the estimated impact on the probability of being in employment in 2015 from the PSM models. Level of significance: *** p<0.01, ** p<0.05, * p<0.10.

[33] In the Kelly *et al.* (2015) study the control group was drawn from the Live Register and consisted of individuals with similar characteristics to those of the BTEA participants (for instance age, previous occupation, labour market history).

Table 13: Employed in 2015 – Estimated Impact Relative to Leaving Certificate Students who Progressed Straight to Higher Education

Treatment Group	*Control Group*	*Estimate*
PLC	LC – straight to HE	0.01
PLC who went to HE	LC – straight to HE	–0.08
PLC who did not progress to HE	LC – straight to HE	0.06
General PLCs	LC – straight to HE	–0.05
Job Specific PLCs	LC – straight to HE	–0.03

Source: Authors' own estimates based on PLC Learners' Survey.
Note: Table shows the estimated impact on the probability of being in employment in 2015 from the PSM models. Level of significance: *** p<0.01, ** p<0.05, * p<0.10.

Table 14: Progression to HE – Summary of Estimates

Treatment Group	*Control Group*	*Estimate*
PLC	LC – direct LM entrants	0.27***
Job Specific PLCs	LC – direct LM entrants	0.26***
General PLCs	LC – direct LM entrants	0.38***

Source: Authors' own estimates based on PLC Learners' Survey.
Note: Progression to HE is defined as reporting HE to be main status in Sept. 2010, Sept. 2012 or Sept. 2015.

VII SUMMARY AND CONCLUSIONS

This paper presents some of the central findings produced by an evaluation of the Post Leaving Certificate Programme in Ireland (McGuinness *et al*., 2018). Our analysis of the administrative data indicates a substantial amount of heterogeneity in the regional distribution of PLC places. Furthermore, the provision by county is not consistently linked to the population or estimated demand for places. There is considerable variation across counties in the ratio of enrolments to the total population and no evidence of a relationship between the concentration of PLC places and county-level deprivation levels. This evidence is concerning from a policy perspective, as it demonstrates that young people from disadvantaged regions, who have the highest risk of unemployment, do not have greater access to PLC programmes than those in more advantaged areas. Additionally, despite considerable variation in both the level and composition of labour demand, we saw little movement over the recession period in the concentration of PLC provision across broad subject areas. The enrolments data suggest that the distribution of PLC

places tends to be driven by legacy issues, i.e. places exist in areas where they have always existed, rather than strategic planning. With respect to PLC provision directly linked to particular jobs and occupations, there is evidence of substantial levels of over-supply in some areas. Consequently, there is little evidence that the number of places and composition of provision is reactive to changing labour market conditions. A new initiative involving the establishment of the National Skills Council and Regional Skills Fora, has the potential to provide a mechanism for ensuring a closer match between provision and demand. These new Regional Skills Fora aim to facilitate ongoing employer-educator dialogue to match identified needs with sustainable provision in each region.

Somewhat surprisingly, only just over 70 per cent of PLC learners reported undertaking work experience during their programmes. Of PLC participants, 39 per cent stated that their main reason for undertaking a PLC was to get a job immediately, with a similar percentage reporting that their main objective was progression to HE. Personal development was the key motivating factor for 20 per cent of PLC learners. Descriptive evidence indicates that by 2015 the percentages in employment and higher education from the PLC grouping are broadly comparable with those of the various control groups (direct labour market entrants and individuals who progressed to HE on completion of their Leaving Certificate).

The direct labour market entrant control group was used to calculate the counterfactual estimate of PLC participation and the results show that by 2015, approximately five years following course completion, PLC participants were 16 per cent more likely to be in employment relative to similar individuals who entered the labour market directly on completion of their Leaving Certificate. We found that the employment effects were greater for "job specific" than "general" PLCs, and for PLC participants who progressed directly to the labour market rather than to HE. Regarding transitions to HE, PLC participants were 27 percentage points more likely to have participated in HE by 2015 compared to the control group of direct labour market entrants. Separating the HE progression effects out by PLC type, we find that the effects were highest for individuals undertaking "general" PLCs. The analysis shows that PLC provision acts as an important access platform to HE for individuals who might well have never pursued that particular educational option otherwise.

The findings of the study point to the positive role played by PLC provision in providing educational opportunities for a diverse group of learners and in enhancing their access to employment and higher education. However, the study also highlights a number of challenges for policy development in the PLC sector. Firstly, learners are almost equally divided between those taking PLC courses for skill formation (and hence employment access) and for progression to higher education. However, principals see courses as addressing multiple goals, suggesting greater potential for clarity around the orientation and purpose of specific courses so that learners have clear expectations of the key benefits arising from participation (McGuinness *et al*., 2018). There is a need for greater responsiveness of job-specific

PLC courses to changing labour market conditions in terms of the types of courses offered. Provision is currently constrained by legacy issues, including the skill set of existing staff, with relatively little input of information on skill gaps and employer demand. Finally, in instances where courses are more clearly focused towards progression to employment, as opposed to further or higher study, there should be a much stronger focus on skill formation, with providers adapting course content to focus on employability and heavily integrating work experience placements into the learning experience.

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APPENDIX

Table A.1: Employed in 2015 – Sensitivity Check for Balanced Data I

	Mean Treated	*Control*	*Percentage Bias*	*Percentage Reduction in Bias*	*t-test t p>t*
Age:					
Unmatched	27.496	24.244	66.3		5.45 (0.000)
Matched	25.523	25.223	6.1	90.8	1.58 (0.115)
Male:					
Unmatched	.33241	.53435	–41.5		–4.13 (0.000)
Matched	.33846	.31083	5.7	86.3	0.75 (0.453)
Points (banded):					
Unmatched	3.0831	3	6.2		0.65 (0.514)
Matched	3.1415	3.0782	4.7	23.8	0.64 (0.520)
LC Applied:					
Unmatched	.07756	.23664	–44.7		–4.91 (0.000)
Matched	.07692	.0983	–6.0	86.6	–0.96 (0.336)
Either parent has a degree:					
Unmatched	.15789	.1374	5.8		0.56 (0.577)
Matched	.16308	.16117	0.5	90.7	0.07 (0.947)

Source: Authors' own estimates based on PLC Learners' survey.

Table A.2: Employed in 2015 – Sensitivity Check for Balanced Data II

Sample	*Pseudo R2*	*LR chi2*	*p>chi2*	*Mean Bias*	*Median Bias*
Raw	0.165	94.02	0.000	32.9	41.5
Matched	0.005	4.73	0.452	4.6	5.7

Source: Authors' own estimates based on PLC Learners' survey.