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The labour market returns to classroom-based vocational education

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The labour market returns to classroom-based vocational education

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ABOUT EENEE

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Introduction

The global economy suffered greatly in 2020 as a result of the COVID-19 pandemic. However, the adverse effects of the pandemic experienced by different segments of society have been unequal. The most recent downturn has followed a similar pattern to previous ones, in that individuals with lower levels of education have been more severely affected than the more highly educated. Consequently, policymakers repeatedly stress the importance of education in improving labour market outcomes for individuals. Completing secondary education is no longer a guarantee for securing employment and a decent wage. Although the amount of schooling is clearly related to success in the labour market, the type of schooling received – academic, vocational, or general – is also quite important.

The focus of this report is on vocational education and training, or VET. Specifically, the report only looks at classroom-based VET. It does not include apprenticeships and other work-based VET. Every EU country has a substantial amount of classroom-based VET, including countries with large apprenticeship populations such as Austria and Germany. Thus, this review is pertinent to all EU countries.

As highlighted in Carruthers and Jepsen (2020), VET provides occupation-based skills or applications of skills, as opposed to essential life skills such as numeracy or literacy. Furthermore, VET focuses on skills specific to occupations or jobs, typically ones with moderate skill requirements. Analyses of VET typically do not include extremely high-skill programmes such as medical school or extremely low-skill programmes such as basic adult education teaching literacy.

The format of VET varies across grade level and country. Secondary vocational education typically takes one of two forms. The first is the whole-school model, found throughout Europe, with separate schools for VET, academic, and general education. The second is the integrated model where vocational coursework is offered in sequence or as standalone courses on the same campus and at the same time as general academic and college preparatory courses. Most US students participate in integrated vocational education at comprehensive high schools, although there are whole-school models.

At the postsecondary level, VET also has many formats. In the US, community colleges provide most postsecondary VET. Students typically pursue associate's degrees –typically requiring two-years of full-time enrolment – or certificates – often completed in months rather than years. Community colleges also offer academic degrees and provide up to two-years of university education. In other words, the US also uses an integrated model for its postsecondary VET.

In contrast, most other countries, including EU ones, use the whole-school model. In fact, these countries usually have separate institutions, such as colleges of further education in Ireland, for short-term VET programmes. Other institutions, like universities of applied sciences in many northern European countries, offer vocational bachelor's degrees. Recently, many EU countries such as Finland and Portugal have started offering vocational master's degrees.

This paper provides a non-technical overview of the labour market returns to classroom-based VET. Given the limited research on this topic for EU countries, the review also includes results from other continents. The bulk of this review covers research from the United States, just as the bulk of the economics research on VET is in the US The returns for VET at the secondary school level are presented, followed by returns at the

postsecondary level. The review is based on a recent summary by Carruthers and Jepsen (2020). Dougherty and Ecton (forthcoming) review the causal literature on VET across national contexts, emphasising programmes at the secondary level and their impacts on a range of learning, social and workforce outcomes. Although the results are far from uniform, most studies report positive, and sometimes sizeable, labour market returns to classroom-based VET. The returns are largest for multi-year postsecondary programmes.

1. Secondary School VET

The 2019 edition of the OECD's report 'Education at a Glance' provides an overview of current-day vocational education enrolment (OECD, 2019). Among OECD countries, approximately 40 % of students aged 17 to 18 were in academic secondary schools, 30 % were in vocational schools, and 30 % were not in secondary school. However, overall averages mask substantial heterogeneity in attendance rates, with some countries such as Finland and Slovenia having more than two thirds of secondary school students in vocational education.

1.1. Challenges in Estimating Returns to VET

At the secondary school level, students do not randomly choose whether or not to attend VET versus general or academic education. For example, the highest-achieving students tend to enrol in academic schools. Under the plausible assumption that the highest-achieving students are also the most successful workers, a simple comparison of wages by secondary schooling type will confound the returns to ability with the returns to school type[1].

Consequently, economists look for alternative ways to identify the labour market returns to VET. Specifically, they try to exploit changes in VET attendance that are unrelated (what economists call 'exogenous') to other determinants of wages such as ability. Studies of secondary school VET typically use three types of 'changes' to estimate returns to VET. The first are changes in schooling laws that change the nature of secondary education for every student in a country. The second is to look at school admission rules that randomly assign students into vocational secondary schools. The third simply compares outcomes across school types, assuming that the data are sufficiently detailed to capture salient differences between students in different sectors.

1.2. Studies of Country-level Changes in VET

Most European countries provide several years of general education starting in primary school. Then, at some point, students are divided into specialised streams or tracks such as academic, vocational, and general. Many countries have changed the grade level at which this change occurs. For example, in the 1970s, Finland increased the age at which students are divided into tracks from 11 to 16. Reforms like Finland's change the number

[1] This situation, where more able students pursue more education, is known as ability bias in the economics literature.

of years that students spend in vocational education. Because this change affects everyone in the country, the changes provide 'exogenous' or 'as-good-as-random' changes in vocational education.

Several papers look at the effects of reforms that extend the amount of general education for vocational education students in Sweden (Hall, 2012 and 2016), Romania (Malamud and Pop-Eleches, 2010 and 2011), and Croatia (Zilic, 2018). Oosterbeek and Webbink (2007) study the effects of an increase in compulsory years of schooling for vocational students in the Netherlands. Although these reforms differ along several dimensions such as timing, age range, and country, these studies are consistent in finding inconclusive effects of additional general (and, consequently, less vocational) education on subsequent labour market outcomes.

Although Canaan (2020) also looks at a French reform that extended general education by two-years, from primary into middle grades, the reform also made changes to the curriculum and ability grouping. This set of reforms is associated with increased educational attainment and higher wages (6 %) at ages 40-45. Although many changes occurred at the same time, Canaan (2020) suggests that vocational education likely contributed to this improvement in labour market outcomes. After the reform, students were more likely to choose longer, more rigorous VET programmes than they were before the reform.

In addition, Bertrand, Mogstad, and Mountjoy (forthcoming) study a multi-dimensional reform in Norway that increased general education content in vocational schools, made specific vocational tracks more flexible, and reduced the barriers to accessing university from vocational secondary education. The reform is associated with an increase in earnings of males by 5 % . For females, no difference in earnings was detected.

1.3. Studies of School Admissions Rules

The second strand of research on vocational secondary education utilises admission rules that separate vocational students from other students. These studies focus on comparisons between students who attend vocational secondary education with students who were interested in a vocational programme but were randomly (or as good as randomly) assigned to general or academic education.

Two studies utilise admissions lotteries in US career academies. These schools are similar to European schools in that all the students in the school are enrolled in a vocationally oriented curriculum. Kemple and Willner (2008) conducted a randomised control trial where students were randomly assigned to a career academy or a secondary school with a general curriculum. Students assigned to a career academy had 11 % higher annual earnings several years after high school, as well as increased family stability. Analysis of the results by gender reveals that the gains were much larger for young men; the gains for young women were indistinguishable from zero.

A more recent study, by Hemelt, Lenard, and Paeplow (2019), looked at an admissions lottery for one information technology career academy in the US. Male students who won the lottery and attended the career academy had an eight-percentage-point increase in high school graduation rates, as well as increased college enrolment, compared to students who did not win the lottery and attended a general secondary school. Once again, females did not receive any benefits from vocational education.

In many schools, admission is determined based on qualifications such as student grade point average, a standardised test, and other factors. These admissions requirements, when available, allow researchers to compare students who are just above the admissions threshold versus students who are just below the threshold. When students look similar, if not identical, on all attributes, researchers are able to evaluate the labour market returns to vocational education for students who are at the margin of being accepted versus rejected, at least among schools that are over-subscribed. This method, which is popular in many areas of economics and other disciplines, is known as regression discontinuity.

Dougherty (2018) uses this method to evaluate technical secondary schools in Massachusetts, where he finds that being admitted to such schools is associated with a higher likelihood of high school graduation. He also documents improved high school graduation for a broader population of technical school students, not just those near the admissions cut-off among over-subscribed schools. The higher graduation is unlikely to result from an easier curriculum in technical schools, as Massachusetts' graduation requirements do not vary across school types.

Brunner et al. (2019) use the same technique for an analysis of 16 technical high schools in Connecticut. Males just above the admissions cut-off are 10 percentage points more likely to graduate and 8 percentage points more likely to enrol in college than students who are just below the admissions threshold. For females, outcomes are similar between the barely admitted and the barely rejected students.

In Finland, Silliman and Virtanen (forthcoming) use admissions scores to estimate the labour market returns to vocational secondary education for students at the margin of acceptance into vocational education versus general education. For these students, vocational education is associated with a 7 % increase in earnings. Earnings gains continue throughout the study period, when individuals are in their mid-thirties, and estimated lifetime earnings (measured in present value) are higher for vocational students.

1.4. Other Studies

For the US, Kreisman and Stange (2020) use survey data to study the relationship between vocational course taking and labour market outcomes in schools that offer both types of classes. In other words, students take a mix of vocational and general courses. For their analysis of earnings, Kreisman and Stange (2020) separate vocational education into basic and advanced courses. Basic vocational coursework provides no earnings boost, whereas a year of advanced vocational coursework boosts earnings by 2 %, a modest increase[2].

Rather than using survey data, Golsteyn and Stenberg (2017) use detailed administrative data from Sweden to compare vocational and general upper secondary education. They find that vocational students experience higher initial earnings than general education students, but vocational students have a flatter age-earnings trajectory. In other words, the growth rate in earnings over time is lower for vocational students than for general

[2] They also analyse vocational course taking without dividing courses into basic and advanced, and they document positive benefits of vocational course taking similar in size to the returns for advanced course taking.

students. Vocational students have higher earnings at younger ages, whereas general students have higher earnings at later ages.

2. Postsecondary VET

To compare postsecondary VET across EU countries, Ulicna, Messerer, and Auzinger (2016) use a broad definition that includes both short cycle and longer programmes. Under that definition, they report that 20 % of postsecondary students enrol in VET in the EU, with substantial variation across nations[3]. For example, 40 % or more of postsecondary school students attend VET in Belgium, Denmark, and Slovenia, compared with under 5 % in Italy, the Netherlands and Portugal.

2.1. Evidence from the US

Much of the research on labour market returns to postsecondary VET is from community colleges in the US. These institutions offer short-term vocational certificates, two-year associate's degrees, and the first two-years of university. Early work on this topic focused on national surveys and provided comparisons of earnings between individuals with postsecondary VET and those without any postsecondary education. In general, analyses of survey data – both for the US and elsewhere – are based on ordinary least squares regressions. Although such regressions account for differences in observed characteristics such as age and gender, they are typically viewed as descriptive evidence rather than definitive, causal results.

Carruthers and Jepsen (2020) summarise the findings from seven of these early studies using survey data[4]. For an associate's degree, the returns for men are between 7.6 % (Kane and Rouse, 1995) and 21.9 % (Leigh and Gill, 1997). The returns for women are generally higher, ranging from 10.3 % (Marcotte, 2019) to 40.4 % (Marcotte et. al, 2005). Although the estimates vary, the results from survey data consistently suggest positive returns to associate's degrees, with higher returns for women than for men in all but one of the studies.

The temporal pattern in returns to certificates is unclear in the survey data. For high school graduates in the 1970s and 1980s, the returns are positive, although the range of estimates is substantial. In Grubb (1997) and Marcotte (2010), the returns are approximately 6 % for men and 20 % for women, whereas Marcotte et al. (2005) report returns of 18 % for men and 6 % for women.

Because most community college students do not complete a certificate or degree, many studies report the returns to a year of full-time coursework. Again, data from high school graduates in the 1970s and 1980s have consistent results: returns of around 5 % for men

[3] Specifically, the number reported here is the percentage of students in International Standard Classification of Education (ISCED) levels 4-7 who attend VET, taken from Table 11.

[4] The seven studies for associate's degrees are Kane and Rouse (1995), Grubb (1997), Leigh and Gill (1997), Marcotte (2010), Marcotte (2019), Marcotte et al. (2005), and Scott-Clayton and Wen, (2019).

and slightly higher returns of 7-11 % for women. Much less research has been performed on more recent students, although one study suggests even higher returns for men and little evidence of higher returns for women (Marcotte, 2019). However, these results should be interpreted with caution as they are at odds with the results using more sophisticated techniques discussed in the next few paragraphs.

In the 21st century, several research teams have estimated returns to US postsecondary VET using state administrative data sets linking education and earnings. These studies use data from several quarters before and after school attendance, as well as for individuals who complete VET awards and a comparison group of individuals who attend VET but do not complete awards. With these data, researchers compare the differences between post-schooling versus pre-schooling earnings for the completers versus non-completers. These models are called person-fixed effects models because they account for person-specific determinants of earnings that do not vary over time, such as innate ability. Because these models utilise data on pre-schooling earnings, the returns are relevant for mature students, those who have working experience before enrolling in VET. Each study focuses on a specific US state, as each state collects its own administrative earnings data.

Jacobson, LaLonde, and Sullivan (2005a) provide the first, and the most comprehensive, study using administrative data on workers who lost their jobs in the state of Washington. Overall, they find that a year of community college attendance is associated with higher earnings of 9 % for men and 13 % for women. These gains are concentrated in more technically-oriented coursework. In subsequent analysis, Jacobson, LaLonde, and Sullivan (2005b) document that the returns are about 3 % lower for workers over the age of 35. Unlike most studies, the comparison group for displaced workers in VET are displaced workers who did not attend postsecondary VET, so the returns are for VET attendance (measured in years) rather than completion.

Carruthers and Jepsen (2020) summarise nine studies that use similar techniques for estimating returns to US community colleges[5]. In general, these studies control for person-fixed effects and compare community college completers to non-completers, as administrative earnings data contain too little information on which to build a comparison group of workers who did not attend community college.

Among the nine studies, returns vary substantially by award and gender. The general pattern is that returns are higher for completing programmes with a longer duration of study (associate's degrees and what are called 'long' certificates) and lower for completing short certificates. As in the survey data, most studies using administrative data find higher returns for women than for men. For example, roughly half of the studies report returns to associate's degrees of 23-42 % for women and 13-27 % for men. For certificates, most of the estimates for long certificates are more modest. Nonetheless, two studies contain estimated returns of above 40 % for women, and two studies have estimated returns of above 20 % for men. In contrast, there is limited evidence that completing a short-term certificate leads to higher earnings.

[5] The nine studies are: Bahr et al. (2015), Belfield (2015), Carruthers and Sanford (2018), Dadgar and Trimble (2015), Jepsen et al. (2014), Liu et al. (2015), Stevens et al. (2019), Turner (2016), and Zeidenberg et al. (2015).

The research using administrative data focuses on the returns to completing VET. However, the returns to attendance without completion are arguably more policy relevant in the US given that well below half of community college students obtain a degree or certificate. For certificate programmes in Tennessee, Carruthers and Sanford (2018) report higher earnings for non-completers compared with similar workers who did not enrol in VET, similar to the results in Jacobson, LaLonde, and Sullivan (2005a, 2005b) for Washington. Among female welfare recipients in Colorado, Turner (2016) finds no difference in labour market outcomes between women who enrol in community college without completing and women who do not enrol. One interpretation of these disparate findings is that the returns to enrolment without a degree are heterogeneous, benefiting some students but not others.

Approximately 10 % of US postsecondary students attend for-profit institutions (Snyder, de Brey and Dillow, 2019), and most students in for-profit schools pursue VET certificates and associate's degrees. The prevailing sentiment is that the returns to VET are lower in for-profit schools compared to community colleges (Cellini, forthcoming). In fact, Cellini and Turner (2019) find similar earnings students attending for-profit colleges and individuals without any postsecondary attendance. However, Gilpin and Stoddard (2017) believe that the evidence on the level of returns in for-profit colleges versus community colleges is inconclusive[6].

2.2. European Evidence

In contrast, little research has been performed on postsecondary VET in Europe. As in the US, some researchers have used survey data, and others have used administrative data.

Two studies use UK survey data for simple comparisons of wages across individuals with differing education levels. For a single cohort of individuals, Dearden et al. (2002) find that the labour market returns per year of study are similar between vocational and academic qualifications. In other words, the higher wages for academic qualifications than for vocational ones can be explained by the longer duration of study for academic qualifications. Using multiple cohorts of data, McIntosh (2006) reports similar wage differentials.

For Switzerland, Backes-Gellner and Geel (2014) study employment and income differences between academic and vocational tertiary graduates. They find the initially higher incomes for vocational relative to academic graduates fades within five years. At the same time, vocational graduates have lower unemployment rates. Thus, the authors note that this pattern is consistent with a trade-off between higher wages (academic) or higher employment (vocational). Balestra and Backes-Gellner (2017) study how the returns to schooling vary across the wage distribution for individuals with similar years of schooling. Academic education has higher returns at the higher end of the wage distribution, whereas vocational education has higher returns at the lower part of the wage distribution.

[6] This view is consistent with preliminary work in Jepsen et al. (2020) using administrative data from Missouri.

Glocker and Storck (2014) use German Census data to compare earnings across fields of study, and they use a model adapted from the finance literature as opposed to traditional 'returns to schooling' models. For most fields of study, returns are higher for academic bachelor's degrees, but some vocational bachelor's degrees also have high returns.

Multiple studies from Finland use detailed, administrative data to compare labour market outcomes between individuals with different levels of vocational postsecondary education. Böckerman, Hämäläinen, and Uusitalo (2008) and Hämäläinen and Uusitalo (2008) exploit an education reform upgrading vocational postsecondary education into vocational bachelor's degrees. Graduates of the new programme have short-run improvements in employment and earnings relative to graduates of the old system.

Böckerman, Haapanen, and Jepsen (2018) report higher earnings of around 10 % and employment of 5 percentage points for vocational bachelor's degree recipients relative to individuals with no postsecondary education. Using similar techniques, Böckerman, Haapanen, and Jepsen (2019) find that attending a vocational master's programme in Finland is associated with an increase of earnings of 7 % for vocational bachelor's degree recipients.

Elsewhere in Europe, McGuinness et al. (2019) find that individuals attending short-term certificate programmes in Ireland have an increase of 16 % in short-term employment relative to individuals not pursuing postsecondary education.

2.3. Canada, Australia, and New Zealand

In Canada, several studies report differences in earnings by education level, typically using simple regressions on Census data (Boothby and Drewes, 2006; Caponi and Plesca, 2009; Boudarbat, Lemieux, and Riddell, 2010; Foley and Green, 2016). Two consistent findings emerge from these studies. First, completion of postsecondary certificates or diplomas leads to a 10-15 % increase in earnings compared to a high school degree. However, this return is under half the return for a bachelor's degree. Second, the gains to postsecondary VET have grown by approximately 30 % since 1980. In addition to the literature on completers, Ferrer and Riddell (2002) report earnings increases for years of schooling as well as for postsecondary vocational awards.

The labour market returns for postsecondary VET in Australia are mixed. Coelli and Wilkins (2009) and Polidano and Ryan (2016) document improved earnings and employment for individuals who receive vocational postsecondary credentials compared to high school graduates. However, Lee and Coelli (2010) suggest that high dropouts obtain most of the benefits from obtaining certificates. In their study of mature students, Coelli and Tabasso (2019) find no systematic gain in labour market outcomes from attending VET, aside from increased job satisfaction.

The evidence for New Zealand is not promising, based on detailed administrative data and sophisticated analyses (as in studies of Finland and the US). Crichton and Dixon (2011) suggest that the receipt of sub-baccalaureate certificates and diplomas provide no increase in employment or earnings. When they investigate returns by field of study and gender, they find substantial heterogeneity: awards in some fields improve labour market outcomes, but awards in other fields reduce outcomes. In follow-up work, Tumen, Dixon, and Crichton (2018) focus on secondary school dropouts aged 15-21. They find some evidence of improved employment for dropouts who complete a certificate, but they see no improvement in earnings.

In summary, the substantial VET returns found in the US are more moderate in Canada. The benefits of VET are even less pronounced in Australia and New Zealand. Potential explanations for the latter result include the high level of earnings for individuals without postsecondary education and the high percentage of individuals in postsecondary education relative to OECD countries (Norgrove and Scott, 2017).

3. Combined Secondary and Postsecondary VET

In several studies, the authors do not distinguish between secondary and postsecondary education. These studies typically use survey data from multiple countries and compare labour market outcomes for individuals with vocational education versus those with general education. Because these studies do not distinguish between upper secondary and postsecondary students in each schooling type, the findings should be interpreted as a combined return for secondary and postsecondary VET.

Several studies find that the relationship between employment and vocational education, compared to academic or general education, fluctuates with age (Hanushek et al., 2017; Brunello and Rocco, 2017a, 2017b; Hampf and Woessmann, 2017). At younger ages, vocational education is associated with higher employment; at older ages, vocational graduates have equal or worse employment rates. Brunello and Rocco (2017b) find similar evidence for vocational students in the UK, where they have higher wages early in their career and lower wages later in their career. Hanushek et al. (2017) and Brunello and Rocco (2017a) reproduce this broad pattern of results for multi-country studies.

Hallsten (2012) and Stenberg and Westerlund (2016) find earnings and employment gains for individuals attending postsecondary education (academic or vocational) later in life in Sweden.

In addition to comparing employment rates by age and type of education, Hanushek et al. (2017) use administrative data from Austria to look in more detail at workers over age 50. Although they do not have information on vocational education, they use worker type as a proxy, where blue-collar workers predominantly have vocational education and white-collar workers typically have academic education. They show that blue-collar workers were less likely to be re-employed than white-collar workers following a plant closure. This finding echoes the more general pattern of employment and education type over the life cycle that they and other studies report. Furthermore, this finding is consistent with the idea that the more-specific education typically provided in vocational education may make a worker vulnerable to economic shocks in later ages. However, one cannot distinguish whether this observed difference is due to initial education type, lifelong learning, on-the-job training, or other factors.

Conclusions

As this summary illustrates, the returns to VET depend on several factors such as the level of schooling (secondary versus postsecondary), the location, and the comparison group. Nonetheless, the literature provides several lessons.

A common theme across studies is that vocational education benefits the students who select into it. This conclusion supports the basic economic principle that people generally make good choices, under the assumptions that individuals have sufficient information and

access. For example, US students choosing to obtain advanced knowledge in vocational education have better labour market outcomes than their peers (Kreisman and Stange, 2020).

Given the random or as-good-as-random opportunity to attend secondary VET, students attending such schools have higher graduation rates and improved earnings early in their post-schooling careers (Kemple and Willner, 2008; Dougherty, 2018; Hemelt, Lenard, and Paeplow 2019; Silliman and Virtanen, forthcoming). Mature adults choosing to return to pursue vocational certificates or degrees have higher earnings than similar workers who did not enrol (Jacobson, LaLonde, and Sullivan, 2005a & 2005b; Carruthers and Sanford, 2018). These results suggest that students benefit from choosing what subjects they wish to study, whether in integrated secondary school system offering vocational and non-vocational courses or in a dedicated vocational or academic school.

At the same time, not all students benefit from VET. Changes in VET as a result of changes in national policies that shifted time spent in vocational versus general education (Oosterbeek and Webbink, 2007; Malamud and Pop-Eleches, 2010, 2011; Hall, 2012, 2016; Zilic, 2018) have no discernible effect on earnings or employment. In at least one instance, earnings are lower for the post-reform students (Hanushek et al., 2017). In sum, VET returns are higher in studies where students actively choose VET rather than when they are subjected to reforms changing the amount of VET they take.

At the postsecondary level, most studies document improved labour market outcomes for individuals receiving an award such as a certificate or degree relative to not obtaining a degree or, in some cases, not attending postsecondary education at all. The finding that longer programmes have more benefits than shorter programmes is consistent with the returns to programme depth documented in secondary schools (Kreisman and Stange, 2020). However, the benefits of postsecondary VET are higher in the US than in other non-European countries such as Australia or New Zealand.

The results regarding earnings over the life cycle are less clear. The highest-quality studies on VET suggest that students who choose to enrol in VET receive short-run and medium-run gains in labour market outcomes. Furthermore, Silliman and Virtanen (forthcoming) estimate that lifetime earnings are higher for vocational students. In contrast, descriptive studies, which look at the entire vocational student population, or the 'average' student, find that vocational students have worse long-run outcomes. Thus, the challenge for VET providers is to figure out how to ensure that the benefits for the 'average' student are as good as the benefits for the 'marginal' student. An example is to expand the number of places in VET programmes, especially for over-subscribed programmes.

For the US, the returns to VET vary by gender. At the secondary level, the benefits of VET are much more pronounced for men than for women. Yet, at the postsecondary level, most studies find higher returns for women than for men. Among postsecondary VET students, health is the most popular field of study for women, and it has among the highest returns, at least for associate's degrees and long certificates.

Given the increased availability of detailed administrative data throughout Europe, the VET literature for EU countries should be as detailed as the US literature. Governments at all levels should facilitate the use of administrative registers for educational research, both within and across countries. Furthermore, governments and researchers should collaborate on identifying research questions of interest to both groups, producing both non-technical, policy-relevant research summaries alongside more technical, cutting-edge academic publications. With such support, researchers would not have to look to other continents to

understand the relationship between VET and labour market outcomes. An example is for short cycle, postsecondary VET programmes similar to the certificates offered in US community colleges. McGuinness et al. (2019) illustrate the short-run employment gains to such programmes in Ireland, and future work should document the longer-run outcomes for earnings and employment. Such in-depth, country-specific information should be complemented by descriptive, cross-country comparisons using survey data like the 'Survey on Income and Living Conditions'. Utilising both survey and administrative data will provide a comprehensive view of VET and labour market outcomes in the EU.

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