



VET and International Students

(Best printed in colour)

Tom Karmel
April 2023

Mackenzie Research Institute
E: tom.karmel@hotmail.com
info@mri.edu.au

CONTENTS

Executive Summary.....	3
1. Introduction	8
2. Trends over time.....	9
3. Demographics of VET students.....	11
4. Revenue considerations.....	16
5. An occupational lens.....	17
6. Discussion.....	29
References	35

Executive Summary

International education has been a feature of Australia's tertiary education sector for a very long time. Most attention has been given to international students in higher education but the numbers attending vocational education have also been very substantial. The motivation for international students studying in Australia – by educational institutions and the students themselves - has always been somewhat confused, and a little ambiguous. Those advocating for the benefits of international students have pointed to their value to the economy - that is, education as an export - and to the benefits to domestic students from having international students as their fellows. However, it seems fairly obvious that providers have been attracted to the revenue generated by international students. In higher education the revenue from international students bolsters research, but in VET provision is dominated by private providers (presumably for profit).

The purpose of this paper is to look at international students in VET in some detail – where they come from, the fields they study, and the outcomes on completion. In respect of the latter we are particularly interested in the extent to which international graduates are ending up in employment in areas of the labour market where there are either shortages or the long term demand is strong, at least according to the categorisation of occupations undertaken by the former National Skills Commission (now replaced by Jobs and Skills Australia). The motivation is to test the extent to which International VET students address labour market pressures. If there are few labour market benefits from VET international students then we are left with this sector providing a profit to private providers, and nothing much more.

In this regard, it is an historical fact that there has been considerable sorting in respect of international students.

In addition, it is clear that many international students are attracted to study in Australia because of the possible benefit in terms of migrating to Australia, and indeed some visa classes (such as temporary graduate visas) have expressly allowed graduates to stay in Australia for work reasons. The main policy motivation for this seems to be in terms of international students providing a source of labour to the labour market, thus suggesting that international students provide another source of labour market flexibility. Our interest is the extent to which this logic applies to VET international students, noting that recent extensions to post graduation work-rights apply only to certain higher education awards.

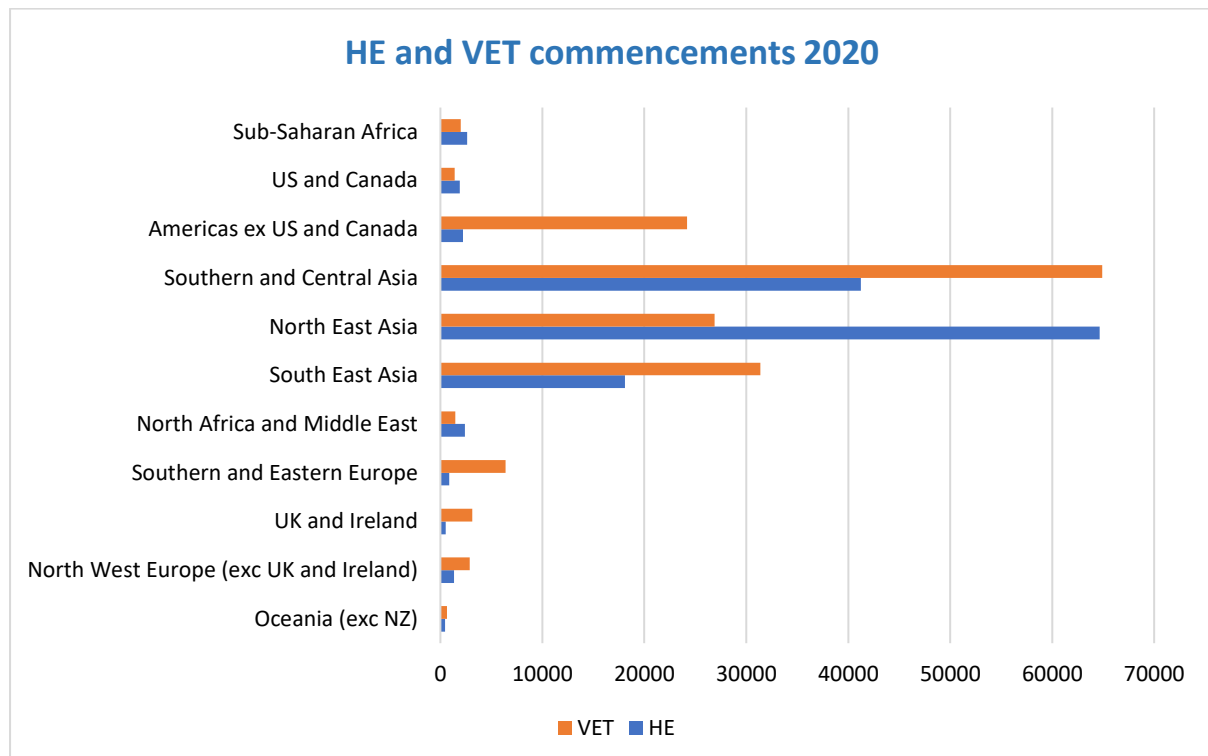
In addition, the existence of work-rights for those studying in Australia is an important consideration for many International students. Anecdotally, for some VET students the work rights make it worthwhile studying in Australia, even if permanent migration does not eventuate, because Australian wage rates are so much higher than those of their native country.

The results of our study do not fly in the face of the earlier research. They are consistent with perceived wisdom that international education is associated with migration as well as skills acquisition and that employment outcomes are mixed. However, an important point is that the devil is in the detail. In particular, students come from different countries, undertake a range of qualifications and have different degrees of success in obtaining employment, particularly in respect of a job related to the training they have undertaken.

The main points to emerge from the study are:

- VET student numbers are very considerable. Direct comparisons with higher education are difficult because of the different durations of courses, but in terms of commencements VET numbers have been in recent years somewhat larger than those in Higher Education¹
- The country of origin for VET students is similar to that of higher education students, with large numbers from Southern and Central Asia, North East Asia and South East Asia. However, in VET there are also substantial numbers of students from the Americas (excluding the US and Canada).

Figure 1: International student commencements for Higher Education and VET, 2020



Source: Commonwealth Provider Registration and International Student Management System (PRISMS) database, pivot table.

¹ According to the Commonwealth Provider Registration and International Student Management System (PRISMS) database, pivot table VET commencements were around 165,000 compared to Higher Education commencements of 136,000.

- There has been rapid growth in VET students in recent years in those from Southern and Central Asia, such that this group is by far the largest in 2019 and 2020.
- Provision of VET to international students is dominated by private providers. This is especially the case for the largest field of education – management and commerce.
- The demographic distribution varies considerably across the country groupings. Males make up over 70% of students from Southern and Central Asia, compared to 54.9% overall. The largest age group consists of those between 25 and 49 years, although the younger age group (15-24 years) makes up more than 50% of students from North America, Southern and Central Asia and North Africa and the Middle East.
- VET international students tend to undertake diplomas and Certificates III/IV with around one half having a diploma or higher qualification and a further 45% having a Certificate III/IV. VET students from Oceania and North Africa and the Middle East have the highest proportions undertaking lower level qualifications (18.7% and 14.7%, respectively).
- The most popular field of education is management and commerce (just over 50%). Other fields with substantial numbers of students are food, hospitality and personal services (12.8%), society and culture (9.7%) and engineering and related technologies (7.9%). Of the students undertaking management and commerce qualifications, around 70% are undertaking a diploma or higher qualification.
- The most popular course overall is a diploma in management and commerce, followed by a Certificate III/IV in the same field, and a Certificate III/IV in food, hospitality and personal services.
- International students make up a very substantial portion of students in courses leading to a range of occupations at the four digit ANZSCO level, notably general managers 1112 (57% of commencing students over 2016-2021 were international), contract, program and project administrators 5111 (36%), accommodation and hospitality managers 1410 (78%), chefs 3513 (81%), cooks 3514 (47%), office and practice managers 5120 (52%) and motor mechanics 3212 (30%).

Mapping intended occupations to labour market categories (as defined by the former National Skills Commission) enables us to scrutinise the alignment of courses to labour market needs.

Overall the international students are more aligned to occupations in shortage or with strong long term demand than are domestic students. Moreover the completion rates of international students are higher than those for domestic students. However, there is a big gap between what international students aspire to and their actual employment outcomes.

First, over 30% of the graduates have not managed to find employment at the time of the outcomes survey. Second, the success of graduates in finding a job where there is a shortage or strong long term demand (according to the National Skills Commission) varies considerably by field of education. Fields with relatively good alignment are food, hospitality and personal services (53.9% of graduates over 2017-2021 are in an occupation in shortage or strong long-term demand), architecture and building (46.1), health (45.5), education 42.4 and engineering and related technologies (38.1%). Graduates in information technology had particularly poor outcomes (24.5% in an occupation in shortage or strong long term demand).

The proportion of students undertaking further study is quite high with over 60% (2017-2021 data) of those on a student visa undertaking further study and 38% on a bridging visa. For those on a temporary graduate visa the figure was 23%. We also note that just under 80% of those in further study in Australia were doing so at a higher level.

Do our findings have any lessons for policy? The findings that stand out are that on the whole the alignment between what is being studied and the labour market is pretty good, but the alignment between the jobs that graduates actually get and the courses they have undertaken is much looser. In particular, there is a very high number of VET international students undertaking business and commerce qualifications and relatively few are obtaining jobs associated with these qualifications or a job in an occupation in shortage or with strong long term demand. This is not to say that many do not find employment (and in a tight labour market individuals with no qualifications will be able to find employment relatively easily) but that the jobs they get have little to do with the qualifications that had been undertaken. In addition, we see high proportions of graduates continue with their study, mostly at a higher level. It would appear that many of these students see VET as a way of staying in Australia, rather than obtaining an immediate employment benefit. By contrast, graduates in hospitality, food and personal services are finding considerable employment in the area in which they have trained. This is a clear example of international education addressing an immediate skills shortage. Moreover, in a number of these areas international students constitute a very sizable proportion of the student cohort (around 80% of students undertaking chef qualifications were international students, for example). The alignment between course and labour market needs is also fairly good in architecture and building, health, education and engineering and related technologies. Thus one could argue that the current set of parameters is fine if the main purpose of international VET education is to provide a source of revenue for the industry, but they are of modest benefit to questions of skills shortage. If the main purpose of international education in VET were to satisfy labour market needs then the distribution of students across fields of study would have to change; more chefs, cooks and motor mechanics and fewer graduates with management and commerce qualifications. In respect to the latter, it is also worth commenting that the beneficiary of the revenue is private providers, and one would suspect that there are few spill over benefits to domestic consumers of VET.

It is interesting to note that the latest extension of post-study work rights focuses entirely on graduates with degrees, with a particular emphasis on health qualifications. The logic of the program – to address skills shortages and to assist the international education industry - suggests that we should consider adding other qualifications to this list. Obvious additions would be VET qualifications in food, hospitality and personal services and architecture and building, health, education and engineering and related technologies. If this is too broad a brush it would be a simple matter to identify courses aimed at specific occupations. At least such an amendment would put VET on a more equal footing relative to higher education.

1. Introduction²

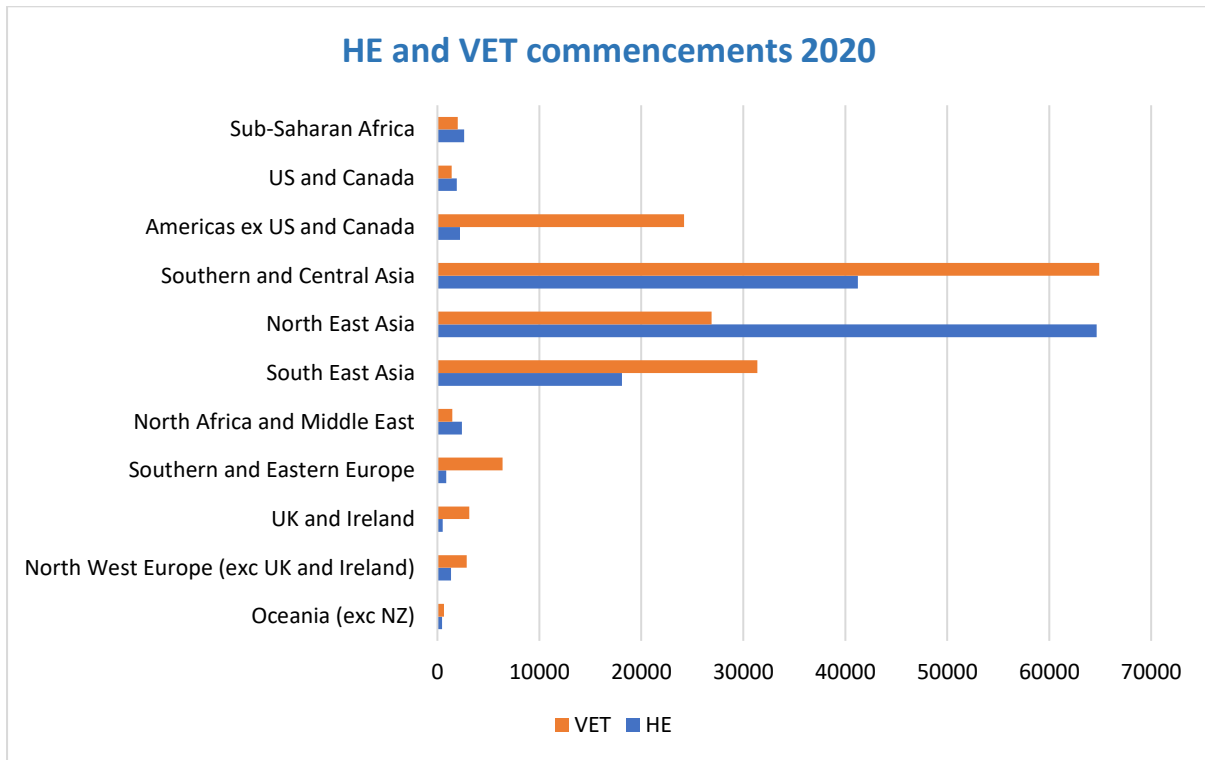
In this paper we look at international students in Vocational Education and Training. While much of the analysis is descriptive in nature, our key interest is the extent to which international students undertake courses which address the needs of the labour market, the extent to which they complete courses and the outcomes of graduates. The underlying issue is whether international students in VET should be welcomed primarily as a revenue source or whether they can be seen as a positive contributor to the labour market.

We first provide a description of international students. Using Australian International Education data we look at how the numbers have fluctuated over the last 20 years or so, and the origin of the students. We then provide a characterisation of the students – their demographics and the courses they undertake. Section 4 considers briefly revenue considerations. In Section 5 we apply an occupational lens to the courses undertaken by international students. We use a mapping developed in Karmel (2022), with the idea of seeing how the courses undertaken by international students relate to current shortages in the labour market and longer term labour market prospects. We then focus on employment outcomes and how they relate to the courses studied on one hand and skill shortages on the other. We conclude with a discussion.

Figure 1 provides a snapshot of commencements by international students for VET and higher education, respectively. We choose commencements rather than enrolments in order to capture cohorts of students entering their courses.

² I would like to thank the MRI Advisory Board for comments on a draft, especially Gerald Burke for drawing my attention to the work he has done on finances.

Figure 1: International student commencements for Higher Education and VET, 2020



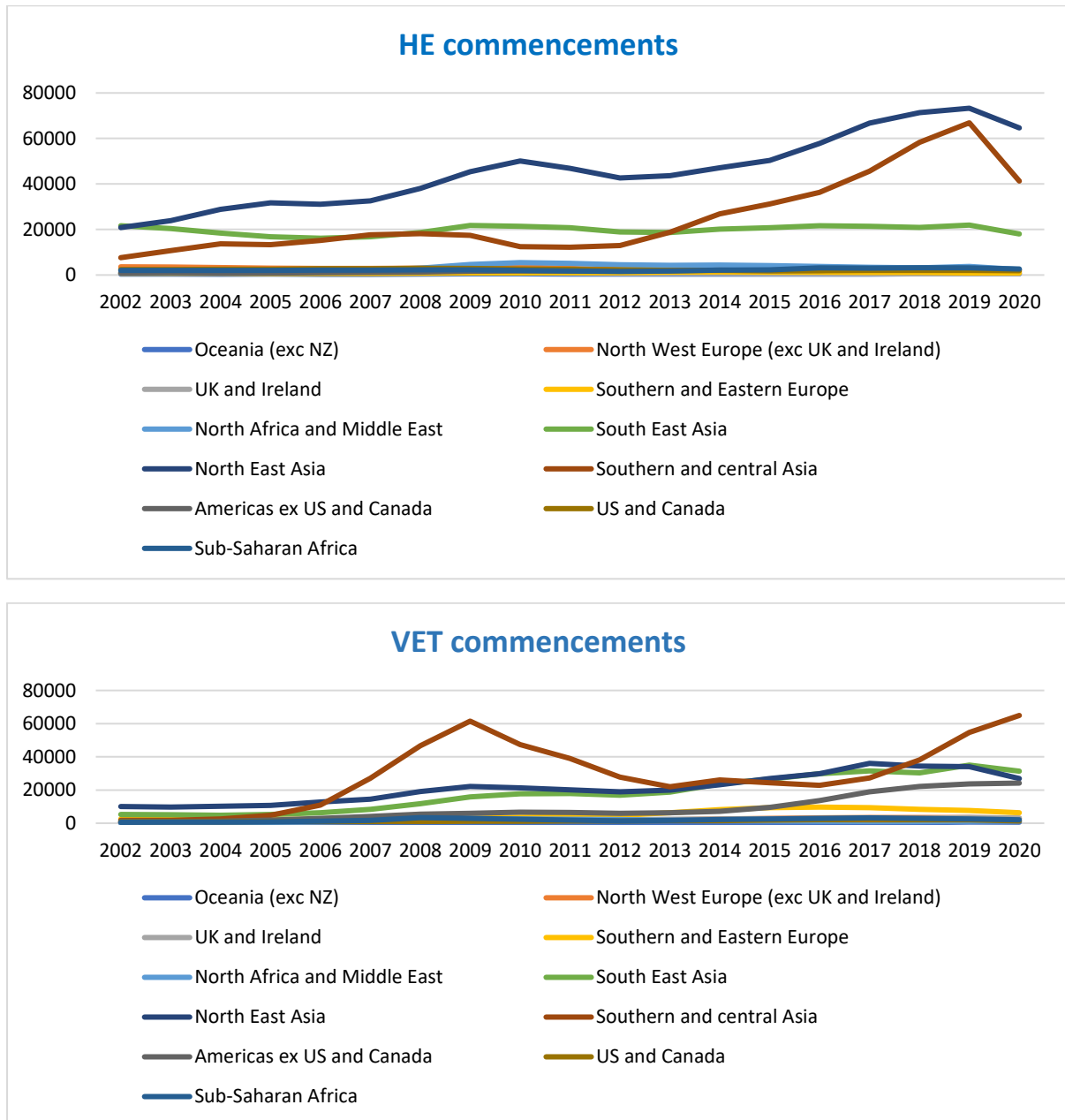
Source: Commonwealth Provider Registration and International Student Management System (PRISMS) database, pivot table.

We see that there are more VET commencements than higher education commencements for all regions except North East Asia (dominated by China) and North Africa and the Middle East (although numbers of students from this region are quite small). The three most important regions for both higher education and VET are Southern and Central Asia, North East Asia and South East Asia. We also see that the numbers of students from Americas (excluding the US and Canada) are large for VET but very small for higher education.

2. Trends over time

Figure 1 of course is a snapshot at a point in time. In Figure 2 we show the trends since 2002.

Figure 2: International student commencements for Higher Education and VET, 2002-2020



Source: Commonwealth Provider Registration and International Student Management System (PRISMS) database, pivot table.

In higher education, we see that all the action is in the students from North East Asia, Southern and Central Asia and South East Asia. Over the last twenty years or so the numbers from North East Asia have steadily grown although there was some downturn in 2011-2012 and in 2020. International students from Southern and Central Asia have grown rapidly since 2010, and almost rivalled those from North East Asia in 2019 before a quite dramatic fall in 2020.

The patterns in VET are somewhat different. First, the numbers are sufficient to observe the trends for five regions (Southern and Central Asia, South East Asia, North East Asia, the

Americas excluding the US and Canada, and Southern and Eastern Europe). Broadly speaking, numbers have grown steadily for South East Asia, North East Asia, and the Americas excluding the US and Canada, while they have fluctuated quite dramatically for Southern and Central Asia. In respect of the latter, we saw numbers grow from around 5,000 in 2005 to 62,000 in 2009 before dropping back to 22,000 in 2013. Between 2013 and 2017 the numbers were fairly flat before growing rapidly once again, reaching a high point of 65,000 in 2020.

We can only hypothesise what has driven these movements in the number of international students. Clearly, student demand must be a key factor, but it is likely that Australia’s visa system is also playing an important part. Two aspects are relevant here - the rules associated with obtaining a student visa and the rate at which visa applications are processed.

3. Demographics of VET students.

In this section we present a series of tables showing the distribution of students by a range of characteristics: gender, age, previous highest qualification, and field of study. To ensure robustness we average over the period 2015-2021.

We begin with gender (Table 1).

Table 1: VET international commencements 2015-2021, by country of birth and gender (percentage male)

	Percentage male
Oceania excluding Australia and NZ	59.3
North West Europe excluding UK and Ireland	40.3
UK and Ireland	53.2
Southern & Eastern Europe	54.2
North Africa & The Middle East	68.1
South-East Asia	43.8
North-East Asia	48.4
Southern & Central Asia	72.5
Americas excluding North America	50.2
North America	37.8
Sub-Saharan Africa	54.9
Not known	53.1
Total	54.9

Source: NCVET VOCSTATS TVA program enrolments

We see that overall males outnumber females (54.9% male). International students Southern and Central Asia and North Africa and the Middle East are very much male dominated. By contrast, there are a number of regions where the females outnumber males, namely North America (37.8% male) North West Europe excluding UK and Ireland (40.3% male), South East Asia (43.8% male).

In Table 2 we look at the distribution across age groups.

Table 2: VET international commencements 2015-2021, by country of birth and age

	15-24 years	25-49 years	50 years and over	Total
Oceania excluding Australia and NZ	24.0	71.5	4.5	100
North West Europe excluding UK and Ireland	35.8	63.6	0.6	100
UK and Ireland	21.7	76.8	1.4	100
Southern & Eastern Europe	20.2	78.7	1.1	100
North Africa & The Middle East	53.3	45.6	1.1	100
South-East Asia	36.3	63.1	0.6	100
North-East Asia	43.6	55.6	0.8	100
Southern & Central Asia	55.4	44.5	0.1	100
Americas excluding North America	18.6	81.0	0.5	100
North America	57.9	40.0	2.1	100
Sub-Saharan Africa	41.7	56.9	1.4	100
Not known	52.0	47.2	0.7	100
Total	41.6	57.7	0.7	100

Source: NCVET VOCSTATS TVA program enrolments

We see that there are very few international students 50 years and over. The largest group consists of those aged between 25 and 49 years, although there are three regions where the students are dominated by the age group 24 years and under- North America (57.9%), Southern and Central Asia (55.4%), North Africa and the Middle East (53.3%).

We now move on to the programs that the students are undertaking. In Table 3, we show the distribution of students over various levels of qualification. We divide qualifications into three groups: diploma or higher, Certificates III and IV, and other qualifications.

Table 3: VET international commencements 2015-2021, by country of birth and level of course

	Diploma or higher	Cert III/IV	Other	Total
Oceania excl Aus and NZ	15.3	66.0	18.7	100.0
North West Europe exc UK and Ireland	48.2	48.8	3.0	100.0
UK and Ireland	44.9	52.5	2.5	100.0
Southern & Eastern Europe	45.7	46.8	7.5	100.0
North Africa & The Middle East	46.1	39.2	14.7	100.0
South-East Asia	47.8	48.1	4.1	100.0
North-East Asia	53.8	38.6	7.6	100.0
Southern & Central Asia	53.2	45.0	1.9	100.0
Americas excl North America	52.1	43.6	4.3	100.0
North America	38.2	60.0	1.8	100.0
Sub-Saharan Africa	48.2	48.8	3.0	100.0
Not known	52.2	42.0	5.8	100.0
Total	50.2	44.6	5.1	100.0

Source: NCVET VOCSTATS TVA program enrolments

We see that overall the majority of students are undertaking a diploma or higher level of qualification with most of the remainder undertaking a Certificate III or IV or higher level. Very few students are undertaking a lower level qualification.

In Table 4 we show the distribution of international students by field of education.

Table 4: VET international commencements 2015-2021, by field of education

01 - Natural and physical sciences	0.2
02 - Information technology	4.3
03 - Engineering and related technologies	7.9
04 - Architecture and building	2.7
05 - Agriculture, environmental and related studies	0.4
06 - Health	2.2
07 - Education	3.0
08 - Management and commerce	50.3
09 - Society and culture	9.7
10 - Creative arts	1.4
11 - Food, hospitality and personal services	12.8
12 - Mixed field programmes	4.8
Not known	0.4
Total	100.0

Source: NCVER VOCSTATS TVA program enrolments

We see that international students are heavily concentrated in relatively few fields of study. Around half are undertaking management and commerce programs, with substantial numbers also in food, hospitality and personal services. There are also appreciable numbers in society and culture and engineering and related technologies. For these four fields we also present the distribution by country of birth.

Table 5: VET international commencements 2015-2021 by country of birth, selected fields of study

	08 - Management and commerce	11 - Food, hospitality and personal services	09 - Society and culture	03 - Engineering and related technologies
Oceania excl Aus and NZ	26.4	10.9	11.6	20.2
North West Europe excl UK and Ireland	48.4	5.6	24.9	1.9
UK and Ireland	52.5	5.9	11.6	7.7
Southern & Eastern Europe	58.8	7.5	11.5	2.5
North Africa & The Middle East	39.1	3.2	6.2	30.5
South-East Asia	57.0	15.1	7.6	4.4
North-East Asia	51.4	10.0	10.8	6.1
Southern & Central Asia	42.2	21.2	7.3	11.9
Americas excl North America	61.9	7.9	8.6	3.6
North America	18.2	2.5	57.7	1.7
Sub-Saharan Africa	36.1	7.2	16.9	13.2
Not known	54.6	7.8	6.7	9.1
Total	50.3	12.8	9.7	7.9

Source: NCVER VOCSTATS TVA program enrolments

We see that there is considerable variation across country of birth. Management and commerce is particularly popular for students from the Americas (excluding North America), Southern and Eastern Europe and South East Asia. Birthplaces with relatively high numbers

in food, hospitality and personal services are Southern and Central Asia and South East Asia. Birthplaces with relative high numbers in society and culture are North America and North West Europe (excluding UK and Ireland) and Sub-Saharan Africa. Finally, engineering and related technologies are relatively popular for students from North Africa and the Middle East, Oceania and sub-Saharan Africa.

We complete this description by presenting the most popular course (level by fields of study). In Table 6 we show the distribution of courses for all international VET students while in Table 7 we show the most popular course for each birthplace.

Table 6: VET international commencements 2015-2021 by field of study and education level (percentage of total international commencements)

	Diploma or higher	CertIII/IV	Other	Total
01 - Natural and physical sciences	0.1	0.1	0.0	0.2
02 - Information technology	3.2	1.0	0.1	4.3
03 - Engineering and related technologies	2.9	4.5	0.5	7.9
04 - Architecture and building	1.0	1.6	0.1	2.7
05 - Agriculture, environmental and related studies	0.1	0.2	0.0	0.4
06 - Health	1.5	0.6	0.1	2.2
07 - Education	2.0	1.0	0.0	3.0
08 - Management and commerce	35.1	14.0	1.2	50.3
09 - Society and culture	3.2	5.9	0.7	9.7
10 - Creative arts	1.0	0.4	0.0	1.4
11 - Food, hospitality and personal services	0.1	12.4	0.2	12.8
12 - Mixed field programmes	0.0	2.9	1.9	4.8
Not known	0.0	0.0	0.4	0.4
Total	50.2	44.6	5.1	100.0

Source: NCVER VOCSTATS TVA program enrolments

We have bolded the three most popular courses, namely a Diploma in Management and Commerce, a Certificate III or IV in Management and Commerce and a Certificate III/IV in Food, Hospitality and Personal Services.

Table 7: Three most common courses in each birthplace region (% of commencements in that region 2015-2021)

	Most common qualifications			Second most common qualification			Third most common qualification		
	Field of study	Level	%	Field of study	Level	%	Field of study	Level	%
Oceania excluding Australia and NZ	08 - Management and commerce	cert III/IV	15.0	11 - Food, hospitality and personal services	cert III/IV	9.9	09 - Society and culture	cert III/IV	8.9
NW Europe excluding UK and Ireland	08 - Management and commerce	diploma	31.3	09 - Society and culture	cert III/IV	17.8	08 - Management and commerce	cert III/IV	15.6
UK and Ireland	08 - Management and commerce	diploma	33.1	08 - Management and commerce	cert III/IV	18.1	09 - Society and culture	cert III/IV	9.0
South East Europe	08 - Management and commerce	diploma	34.8	08 - Management and commerce	cert III/IV	20.5	09 - Society and culture	cert III/IV	8.7
North Africa and the Middle East	08 - Management and commerce	diploma	26.6	03 - Engineering and related technologies	cert III/IV	12.3	08 - Management and commerce	cert III/IV	11.4
South East Asia	08 - Management and commerce	diploma	38.4	08 - Management and commerce	cert III/IV	17.8	11 - Food, hospitality and personal services	cert III/IV	14.6
North East Asia	08 - Management and commerce	diploma	34.7	08 - Management and commerce	cert III/IV	15.1	11 - Food, hospitality and personal services	cert III/IV	9.6
South and Central Asia	08 - Management and commerce	diploma	36.4	11 - Food, hospitality and personal services	cert III/IV	21.1	03 - Engineering and related technologies	cert III/IV	8.7
Americas excluding North America	08 - Management and commerce	diploma	39.6	08 - Management and commerce	cert III/IV	20.3	11 - Food, hospitality and personal services	cert III/IV	7.6
North America	09 - Society and culture	cert III/IV	38.8	08 - Management and commerce	diploma	11.5	07 - Education	cert III/IV	7.2
Sub Saharan Africa	08 - Management and commerce	diploma	24.2	08 - Management and commerce	cert III/IV	11.6	09 - Society and culture	cert III/IV	10.4
Overall	08 - Management and commerce	diploma	35.1	08 - Management and commerce	cert III/IV	14.0	11 - Food, hospitality and personal services	cert III/IV	12.4

Source: NCVET VOCSTATS TVA program enrolments

In most birthplace regions the most popular course is a Diploma in Management and Commerce. These are typically business and management courses. Certificates III/IV in Management and Commerce are also popular with students from many regions. Another qualification that stands out is a Certificate III/IV in Food, Hospitality and Personal Services. These are typically food and hospitality courses.

4. Revenue considerations

In this section we consider the importance of international VET students to the revenues of the VET sector. Gerald Burke (2022) has constructed a set of finance statistics relating to 2019. He reports that around \$2.2 billion of private outlays were accounted for by international students fee-for-service. This compares with \$0.8 billion outlaid by domestic students undertaking government funded VET and \$3 billion outlaid for domestic fee-for-service.

It is clear that the bulk of fees from international students goes to private providers. In Table 8 we show the share of international student commencements from 2016 to 2021 by type of provider.

Table 8: International VET student commencements, by type of provider (per cent), 2016-2021

	2016	2017	2018	2019	2020	2021
International student commencements ('000)	146.4	161.6	156.8	187.4	175.5	165.7
TAFE institutes	24.9	20.9	16.0	16.0	10.4	12.3
Private providers	72.3	76.4	81.7	81.4	87.4	86.1
Other	2.7	2.6	2.3	2.6	2.2	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: VOCSTATS TVA program enrolments

We see that the private providers dominate international student provision, and their dominance has increased over time, with private providers accounting for 86% to 87% in 2020 and 2021 compared to 72% in 2016.

We also note that this dominance is most marked for the two largest fields of study, management and commerce and food, hospitality and personal services (see Table 9).

Table 9: International VET student commencements, by field of study and type of provider (per cent), 2015-2021

	TAFE institutes	Private training providers	Other	Total	Commencements 2015-2021 (%)
01 - Natural and physical sciences	51.8	42.9	5.3	100.0	0.2
02 - Information technology	24.4	74.2	1.4	100.0	4.3
03 - Engineering and related technologies	40.6	56.4	3.0	100.0	7.9
04 - Architecture and building	42.7	53.9	3.3	100.0	2.7
05 - Agriculture, environmental and related studies	34.9	63.9	1.2	100.0	0.4
06 - Health	30.1	66.7	3.2	100.0	2.2
07 - Education	23.4	75.1	1.6	100.0	3.0
08 - Management and commerce	13.3	85.7	1.0	100.0	50.3
09 - Society and culture	14.6	74.0	11.4	100.0	9.7
10 - Creative arts	35.9	56.0	8.1	100.0	1.4
11 - Food, hospitality and personal services	16.1	82.8	1.1	100.0	12.8
12 - Mixed field programmes	16.0	83.2	0.8	100.0	4.8
Not known	68.6	25.4	5.9	100.0	0.4
Total	18.7	78.9	2.4	100.0	100.0

Source: VOCSTATS TVA program enrolments

5. An occupational lens

We now apply an occupational lens to courses undertaken by international students. We make use of the 'intended occupation' field in the NCVET course data. While fields of education are a sensible way of looking at the data 'intended occupation' allows a more direct link with the labour market.

In Table 10 we present the 20 most common 'intended occupations' for the period 2016-2021.

Table 10: Number of commencements, 2016-2021, for the 20 most common 'intended occupations' for international students.

	International students	Domestic students	Total	% of students that are international
Program occupation (ANZSCO) group				
1112 General Managers	19906	15194	35101	56.7
5111 Contract, Program and Project Administrators	12435	22297	34732	35.8
1410 Accommodation and Hospitality Managers - nfd	11061	3217	14278	77.5
3513 Chefs	10209	2477	12687	80.5
3514 Cooks	8330	9551	17880	46.6
5120 Office and Practice Managers - nfd	6438	5980	12418	51.8
3212 Motor Mechanics	6304	15042	21346	29.5
5311 General Clerks	4736	93509	98244	4.8
2251 Advertising and Marketing Professionals	4660	1982	6641	70.2
4211 Child Carers	4482	56712	61195	7.3
3131 ICT Support Technicians	3436	15902	19337	17.8
5121 Office Managers	3343	17241	20584	16.2
1321 Corporate Services Managers	2933	690	3623	81.0
5110 Contract, Program and Project Administrators - nfd	2870	1367	4235	67.8
2211 Accountants	2639	2544	5182	50.9
2724 Social Professionals	2461	3734	6196	39.7
4117 Welfare Support Workers	2430	72555	74984	3.2
4233 Nursing Support and Personal Care Workers	2382	70881	73263	3.3
2722 Ministers of Religion	1974	3454	5429	36.4
5511 Accounting Clerks	1862	6722	8584	21.7
Other occupations	50683	1349223	1399909	3.6
Total	165573	1770273	1935847	8.6

Source: NCVER VOCSTATS TVA program enrolments

The majority of courses relate to occupations which correspond to the management and commerce field of study, with a smattering of other occupations. In terms of the trades there are three occupations where international students make up a relatively high proportion of the students: chefs, cooks and motor mechanics.

We now relate the courses undertaken by students to the occupational assessments undertaken by the (former) National Skills Commission. The Commission has assessed the employment prospects for 799 six digit ANZSCO occupations. There are two elements to the assessment: the current labour market assessment which divides occupations into those judged to be in shortage and others; and an assessment of future demand in which occupations are judged to have strong, moderate or soft future demand. In the 2021

assessment, 153 occupations are assessed as being in shortage and 265 assessed as having strong future prospects, as is seen in Table 11.

Table 11: Skills priority list categories, 2021

Current labour market assessment	Future Demand Indicator	Count of (6 digit) occupations
Shortage	Strong future demand	57
Shortage	Moderate future demand	98
Shortage	Soft future demand	9
Total shortage		153
No shortage	Strong future demand	208
No shortage	Moderate future demand	394
No shortage	Soft future demand	44
Total no shortage		646

Source: National Skills Commission 2021

We adopt the methodology developed in Karmel (2021). The main complications to resolve are a conversion of the 6 digit codes used by the Commission to the 4-digit codes provided in the NCVER data, the lack of not further defined codes in the Commission's list, and the omission of a significant number of occupations by the Commission.

To provide a benchmark we present employment data from the Census.

Table 12: Employment by qualification and Skills Commission labour demand categories, 2016

	Post-graduate	Degree or grad dip or cert	Advanced diploma, Certificate III or IV	Other	Total
Shortage/strong demand	12.8	11.6	11.8	5.3	9.3
Shortage/ moderate demand	7.0	6.8	18.1	6.1	10.1
Shortage/soft demand	0.1	0.1	0.5	0.5	0.4
No shortage/strong demand	38.3	31.7	25.5	26.7	28.3
No shortage/moderate demand	36.6	42.2	30.4	28.8	33.0
No shortage/soft demand	0.6	1.4	2.4	2.6	2.1
Not rated (low skilled?)	4.6	6.2	11.3	30.0	16.8
	100	100	100	100	100

Source: Author's calculations based on the Census of Population and Housing, 2016 and National Skills Commission Priority Occupation list.

We see that, overall, occupations assessed as being in shortage account for around 20% of employment. We also see that the overwhelming proportion of employment is in occupations assessed as having strong or moderate demand with only 2.1% of employment assigned to no shortage/soft future demand categories. In fact, the main group of

occupations not given a strong or moderate future demand classification is the ‘not rated’ group – those occupations seen by the National Skills Commission as being of no great interest to skills formation or migration.

We see distinctive patterns for those with VET qualifications: (at the diploma or Certificate III/IV level).

- VET qualifications are more than proportionately represented in occupations assessed as being in current shortage but with only moderate long-term prospects. This most likely reflects trade occupations.
- Those with a VET qualification are over represented in the ‘not rated’ category compared to those with a degree, but under represented compared to those with no post school qualification.

Overall, there is a clear skills bias in the National Skills Commission’s assessment. The Commission sees strongest demand for those with a postgraduate qualification, followed by those with a degree and then those with a VET qualification at Certificate III or higher. The only note of discord is that there are many occupations assessed as being in current shortage but only moderate long-term prospects and those with VET qualifications at Certificate III or higher are over represented in these compared to those with degrees.³

We now apply this taxonomy to commencing VET students, classified by whether they are international or domestic (Table 13).

Table 13: Commencing students by labour demand category and whether domestic or international

	Average 2016-2021		2021	
	International students	Domestic students	International students	Domestic students
Shortage/strong demand	20.3	6.3	21.5	6.2
Shortage/moderate demand	7.7	11.3	10.2	13.0
Shortage/soft demand	0.1	0.3	0.1	0.3
No shortage/strong demand	33.5	36.0	28.7	35.3
No shortage/moderate demand	37.2	30.8	38.4	30.5
No shortage/soft demand	0.3	1.1	0.2	1.2
Not rated	1.0	14.2	0.8	13.6
	100	100	100.0	100.0

Source: Author’s calculations.

³ In the priority list there are 87 occupations assessed as being in current shortage but only moderate future demand. These comprise 3 managerial occupations, 22 professional occupations (mostly medical), 50 trade occupations, and 12 other occupations.

We see that international students are much more likely than domestic students to be studying courses that lead to occupations in shortage, especially those assessed as having strong long term demand. It is also notable that few international students are undertaking courses which are linked with occupations not rated by the National Skills Commission.

So at first sight it appears that international students are more cognisant of labour market issues than domestic students.

We now undertake similar analysis for course completions. This also allows us to look at the completion rates of international students relative to domestic students. While we cannot track individual students we can compare annual completions and commencements. If all courses were less than a year's duration this would provide a precise estimate of the completion rate. If this is not the case, a steady state assumption justifies using the ratio of completions to commencements as an estimate of the completion rate.

Table 14 shows these calculations at an aggregate level.

Table 14: The ratios of completions to commencements, VET 2015-2021

	Completions/Commencements	
	International students	Domestic students
2015	38.8	30.3
2016	53.2	40.9
2017	54.1	42.9
2018	56.5	48.3
2019	49.3	44.7
2020	53.0	47.9
2021	61.2	44.3
Total 2016-2021	54.4	44.6

Source: Author's calculations based on Source: NCVET VOCSTATS TVA program enrolments.

We see that the estimate of the completion rate for 2015 appears to be artificially low. The most likely explanation for this is that all enrolments in 2015 were counted as being commencements, because it was the first time they had been in the system (i.e. commencement is defined as a student not in the previous year's collection). For this reason, we drop the data from 2015. If we do that we see that international students had completion rates between 49.3 and 61.2%, substantially higher than the rates for domestic students which varied between 40.9% and 48.3%.

In Table 15, we show the alignment between the completions and NSC's labour market categories.

Table 15: VET completions across labour market categories, by international/domestic

	International	Domestic
Shortage/strong demand	20.9	6.4
Shortage/moderate demand	8.5	10.3
Shortage/soft demand	0.1	0.3
No shortage/strong demand	33.3	37.0
No shortage/moderate demand	36.0	31.8
No shortage/soft demand	0.3	1.2
Not rated	0.8	13.0
	100	100

Source: Author's calculations

The picture is similar to that for commencements. All in all international students are undertaking and completing courses that align with occupations which are in either shortage or have strong or moderate demand over the long term. Only around one percent of these graduates have undertaken courses rated as preparing individuals for occupations with soft demand or a not rated. This is considerably less than the proportion of domestic students undertaking such courses.

However, the key questions are whether the international graduates are obtaining employment, and whether their employment is matching the needs of the labour market (as advised by the National Skills Commission). To look at these issues, we look at various aspects of the graduates' employment.

First, we point out that the majority of international students were in employment before they commenced their training (although we may not know whether their employment was in Australia). In Table 16 we see that three visa categories accounted for over 90% of the graduates. In the largest category (student visas), over 60% had been employed before training while in the next largest categories (temporary graduate visas and bridging visas) over 70% had been employed before training.

Table 16: 2017-2021 International onshore VET qualification completers who were employed before training, by visa class, outcomes 2017-2021

	Employed before training	Share of graduates
Student Visa	62.9	73.7
Temporary graduate visa	71.5	7.3
Bridging visa (awaiting outcome of substantive visa application)	71.8	11.8
Temporary work visa	81.2	1.1
Partner visa	75.7	1.0
Permanent Residency	70.9	1.7
Citizenship	69.6	0.2
Skilled Migration Visa	78.6	0.6
Tourist Visa	55.7	0.2
Working Holiday	72.7	0.3
Parent/independent visa	32.4	0.0
No Visa/Visa expired	58.3	0.1
Other	71.2	1.4
Not stated	61.6	0.7
Total	65.2	100.0

Source: NCVET VOCSTATS TVA program enrolments

The students' motivation for undertaking the training, not unexpectedly, is dominated by employment related reasons.

Table 17: International onshore VET qualification completer outcomes, reason for undertaking training, by visa class, 2017-2021.

	Student Visa	Temporary graduate visa	Bridging visa (awaiting outcome of substantive visa application)	Other	Total
Reason for undertaking training					
<i>Get a job</i>	13.9	21.5	15.5	17.4	14.9
<i>Develop or start my own business</i>	20.4	17.8	21.5	10.8	19.7
<i>Try for a different career</i>	9.3	11.8	10.4	9.3	9.6
<i>It was a requirement of my job</i>	1.4	5.1	2.3	4.5	2.0
<i>Gain extra skills for my job</i>	12.8	14.6	14.6	19.7	13.6
<i>Get a better job or promotion</i>	8.7	8.7	10.2	10.5	9.0
Employment-related	66.5	79.3	74.5	72.3	68.8
Further study	6.1	1.7	3.1	3.8	5.3
Personal development	27.4	18.9	22.4	23.8	25.9
Not stated	0.0	0.1	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0

Source: NCVET VOCSTATS International onshore VET qualification completer outcomes.

Of interest is the large number undertaking study in order to develop or start their own business. We also note that around a quarter are undertaking training for personal development.

In terms of being employed after training Table 18 presents the data split by whether the employment was in Australia or not, further classified by field of study.

Table 18: 2017-2021 Employment status of International onshore VET qualification completers, by field of study, 2017-2021

	Employed in Australia after training	Employed in another country or not stated	Total	Share of graduates (%)
Natural and physical sciences	48.0	4.8	100.0	0.2
Information technology	52.5	2.4	100.0	5.4
Engineering and related technologies	53.2	6.8	100.0	6.2
Architecture and building	62.9	2.8	100.0	1.8
Agriculture, environmental and related studies	60.9	2.8	100.0	0.6
Health	61.0	4.3	100.0	3.1
Education	61.5	5.8	100.0	2.0
Management and commerce	58.3	3.8	100.0	45.7
Society and culture	55.0	5.0	100.0	15.2
Creative arts	52.5	7.5	100.0	1.6
Food, hospitality and personal services	67.4	1.9	100.0	13.5
Mixed field programmes	46.9	6.0	100.0	4.6
Total	58.0	4.0	100.0	100.0

Source: NCVET VOCSTATS International onshore VET qualification completer outcomes.

We see that overall over 60% were employed, of which 58.0 percentage points were employed in Australia. There is some variability by field of study, with the field of study having the highest percentage of 'employed in Australia' being food, hospitality and personal services.

As an aside, the VET graduates reported that over 80% had achieved their main reason for doing the training, with education and food, hospitality and personal services having rates of over 90%.

Table 19: Achieved main reason for doing the training.

	Achieved main reason for doing the training
Natural and physical sciences	80.6
Information technology	81.5
Engineering and related technologies	85.5
Architecture and building	84.2
Agriculture, environmental and related studies	84.9
Health	87.8
Education	92.1
Management and commerce	84.1
Society and culture	89.7
Creative arts	82.2
Food, hospitality and personal services	90.3
Mixed field programmes	90.2
Total	86.3

Source: NCVET VOCSTATS International onshore VET qualification completer outcomes.

We now look at some of the characteristics of the employment outcomes. We first look at the extent to which employment is related to the training.

Table 20: Employment outcomes of international qualification completers and relevance of training to occupation, 2017-2021

	In same occupation as training course	In different occupation as training course - Training is relevant	In different occupation as training course - Training is not relevant, Occupation unknown or relevance not known	Not employed or not stated	Total	Share of graduates
Natural and physical sciences	16.7	12.9	23.9	46.5	100	0.2
Information technology	3.2	18.9	32.6	45.4	100	5.3
Engineering and related technologies	29.6	12.8	17.4	40.1	100	6.0
Architecture and building	27.4	22.0	16.9	33.7	100	1.7
Agriculture, environmental and related studies	7.3	29.9	26.0	36.8	100	0.6
Health	24.3	24.9	16.6	34.1	100	3.3
Education	33.3	19.7	15.5	31.4	100	2.0
Management and commerce	1.4	36.9	23.5	38.2	100	44.7
Society and culture	21.1	18.1	20.2	40.6	100	15.3
Creative arts	5.4	20.2	34.7	39.8	100	1.6
Food, hospitality and personal services	48.5	11.3	9.4	30.8	100	13.9
Mixed field programmes	0.4	0.3	0.1	99.2	100	5.4
Total	14.7	24.7	19.6	41.0	100	0.0

Source: NCVET VOCSTATS International onshore VET qualification completer outcomes.

We see that overall, the training is relevant to the actual occupation for only 14.7% of the graduates, although a further 24.7% report that the training is of some relevance to their employment. The training is of little relevance in terms of labour market outcomes for around 60% of the graduates. Thus it appears that international graduate employment is only of some relevance to the needs of the labour market. That said, the relevance is much higher for some fields of study. In particular, students completing food, hospitality and personal services are acquiring skills of clear relevance to the labour market, with almost a half in occupations where the training is directly relevant, and nearly 60% are employed and making use of their training. The training is also relatively well targeted in a number of other fields such as education, engineering and related technologies, health, architecture and building, society and culture (all with more than 20% of the graduates in occupations where the training is directly related), although the student numbers are relatively small. As noted earlier the largest student numbers undertake management and commerce qualifications and few of these graduates are in occupations which match the training. However, it is true that considerable numbers of these graduates are in jobs where the training is of some relevance although does not directly correspond to the training (36.9% of the graduates). For these students VET needs to be thought of as useful general training rather specifically vocational training.

It is also worth commenting on the field of information technology – and area which one would have thought would have high demand for workers. The graduates in this field make up some 5% of international graduates. However, these students have among the worst employment outcomes with 3.2% of them in an occupation which matched the training and a further 18.9% in employment where the training was of some relevance. These are poorer outcomes even than creative arts where employment opportunities are notoriously few and far between.

We now look at the actual jobs that graduates obtain, classified by the categories that the National Skills Commission (now Jobs and Skills Australia) has created as a basis for the Priority Occupation list. As a benchmark we have included in the table the distribution of course completions, as mapped into the NSC categories based on the intended occupation of each course. In Table 21 we look at the occupational destinations of all international graduates.

Table 21: Occupational destinations of international graduates mapped into National Skills Commission categories

Occupational category	2017	2018	2019	2020	2021	2016-2021 course completions -intended occupations
Shortage/Strong demand	15.4	16.3	15.6	11.2	16.0	20.9
Shortage/Moderate demand	4.5	4.8	4.6	5.1	5.8	8.5
Shortage/Soft demand	0.0	0.1	0.3	0.1	0.1	0.1
No shortage/Strong demand	16.0	15.6	15.5	15.0	18.3	33.3
No shortage/Moderate demand	8.1	9.3	10.1	7.5	7.6	36.0
No shortage/Soft demand	0.1	0.3	0.4	0.2	0.1	0.3
Not rated	13.1	10.7	10.7	13.5	15.0	0.8
Not stated	4.0	5.8	6.5	3.2	3.5	
Not employed	38.9	37.2	36.4	44.3	33.6	
	100.0	100.0	100.0	100.0	100.0	100

Source: Derived from International Students SOS curf

The first point to note is that international students overall have targeted courses that are aligned well with the labour market. Nearly all of the courses are in occupations which are in shortage or where there is strong or moderate demand in the longer term (as assessed by the NSC). However, there is a big gap between the courses and the actual jobs the graduates get. First, over 30% of the graduates have not managed to find employment at all at the time of the survey (which is approximately 6-12 months after course completion⁴). In the courses aimed at shortages there is reasonable alignment, with around 30% of graduates undertaking courses deemed to be in areas of shortage compared to around 20% of graduates obtaining a job in a shortage occupation. In areas where there are not shortages, the graduates are less successful; occupations assessed as having strong demand making up around 33% of course completions, but around 16% of graduates.

We can undertake the same analysis by field of study. Rather than undertake the analysis for each year we combine the data across years. This has the advantage of increasing the statistical robustness of the figures. We also reduce the number of categories by combining all occupations assessed as having a current shortage, and by grouping together occupations judged as not having shortages and moderate or poor long term demand.

⁴ The survey is conducted in June to mid-August in respect of international graduates from the previous year.

Table 22: Occupational destinations of international graduates mapped into National Skills Commission categories, by field of education (2017-2021)

	Shortage	No shortage, strong long term demand	No shortage, moderate or soft long term demand	Not rated	Not stated	Not employed	Total
1 Natural and Physical Sciences	10.0	23.2	10.0	10.3	0.0	46.5	100.0
2 Information Technology	9.0	15.5	6.4	19.0	4.7	45.4	100.0
3 Engineering and Related Technologies	30.8	7.3	8.3	8.5	4.9	40.1	100.0
4 Architecture and Building	37.6	8.5	5.8	11.1	3.3	33.7	100.0
5 Agriculture, Environmental and Related Studies	14.1	13.4	9.4	22.9	3.4	36.8	100.0
6 Health	16.0	29.5	12.5	6.8	3.9	31.4	100.0
7 Education	18.7	23.7	13.6	6.6	3.5	34.0	100.0
8 Management and Commerce	13.7	18.6	9.6	15.0	4.9	38.2	100.0
9 Society and Culture	15.0	19.0	13.0	8.7	4.3	40.0	100.0
10 Creative Arts	5.5	27.9	10.7	13.1	3.0	39.8	100.0
11 Food, Hospitality and Personal Services	48.4	5.5	1.9	9.5	4.0	30.8	100.0
12 Mixed field programs	11.6	14.3	5.6	16.6	5.2	46.6	100.0
Total	19.9	16.1	8.7	12.7	4.6	38.1	100.0

Source: Derived from International Students SOS curf

We see considerable variation across fields of education. Of particular interest are the two fields with the largest numbers of graduates - management and commerce, and food, hospitality and personal services. The former, with around 45% of the graduates, has fairly poor employment outcomes, with only 32% in occupations which are in shortage or there is strong long term demand. This is on a par with graduates of the creative arts. By contrast, graduates from courses in food, hospitality and personal services, had strong outcomes with almost 50% of them in occupations judged to be in shortage. Other fields with reasonable employment outcomes (say, greater than 40% in occupations with shortages or strong long term demand), include architecture and building, health and education. It is interesting to note that information technology graduates had very poor labour market outcomes.

We complete our analysis by acknowledging that not all graduates are aiming for an employment outcome. We saw earlier that around 2/3 had employment as the reasons for study. In Table 21 we present data on further study, classified by type of visa.

Table 23: Percentage of graduates undertaking further study, by type of visa, 2017-2021

	Student Visa	Temporary graduate visa	Bridging visa (awaiting outcome of substantive visa application)	Other	Total
In further study in Australia	60.6	22.9	38.1	24.2	52.6
In further study in other country	1.5	0.6	1.1	1.1	1.4
In further study, location not stated	6.3	10.0	8.0	13.3	7.2
Not in further study	31.5	66.6	52.7	61.3	38.8
Not stated	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0

Source: NCVET VOCSTATS International onshore VET qualification completer outcomes

We note that of those undertaking further study in Australia just under 80% are enrolled in further study in Australia at a higher level (Table 25).

Table 25: VET international graduates enrolled in further study in Australia

	Percentage	Percentage of those in further study in Australia
Enrolled in further study in Australia at higher level	34.8	77.9
Enrolled in further study in Australia, not at a higher level	9.9	22.1
Enrolled in further study in Australia	44.7	100.0
Not enrolled and not stated	55.3	
Total	100.0	

Source: NCVET VOCSTATS International onshore VET qualification completer outcomes

So we see that about half the graduates, and a much higher percentage on a student visa are continuing their studies, mostly at a higher level.

6. Discussion

International education has been a feature of Australia's tertiary education sector for a very long time. Most attention has been given to international students in higher education but the numbers attending vocational education have also been very substantial. The motivation for international students studying in Australia – by educational institutions and the students themselves - has always been somewhat confused, and a little ambiguous. Those advocating for the benefits of international students have pointed to their value to the economy - that is, education as an export - and to the benefits to domestic students from having international students as their fellows. However, it seems fairly obvious that providers have been attracted to the revenue generated by international students. In this

regard Berquis *et al.* (2019) point to English speaking countries using international education to subsidise their education systems. This is clearly the case in higher education where universities overtly use revenues from international students bolstering research, but not so obvious in VET. This is because the provision of VET to international students is dominated by private providers (presumably for profit), and revenues from international students at TAFEs only provide a modest contribution to TAFE budgets.

In this regard, it is an historical fact that there has been considerable rorting in respect of international students. Initial concerns in the first decade of this century led to the Baird review (2010) of the Education Services for Overseas Students Act. While it is generally acknowledged that this review dealt with many of the issues, cancellation of the registration of considerable numbers of providers by the Australian Skills Quality Agency since 2018 suggests there are on-going issues. Rizvi (2019) reports that over 2018-2019, the Australian Skills Quality Agency (ASQA) cancelled the registration of around 450 private VET colleges, after years of such cancellations being relatively rare. He quotes a spokesperson for ASQA as saying that this reflects an improved “ability to better target regulatory activities on providers demonstrating the highest risks to VET in Australia”. In the opinion piece, Rizvi raises doubt about the merits of qualifications issued by these providers.

In addition, it is clear that many international students are attracted to study in Australia because of the possible benefit in terms of migrating to Australia, and indeed some visa classes (such as temporary graduate visas) have expressly allowed graduates to stay in Australia for work reasons. The main policy motivation for this seems to be in terms of international students providing a source of labour to the labour market, thus suggesting that international students provide another source of labour market flexibility. So the policy framework support international students to study in Australia seems to be a mix of revenue generation, migration (with the benefit that the students have paid for their Australian education), and another lever to address labour market shortages.

The availability of work rights during study and post-graduation for the support of international education has been widely recognised (see for example Arora 2019, Berquist *et al.* 2019 and Chew 2019). In fact, work rights have been seen as one way of making study in a particular country attractive (see, for example, Trevena, P 2019). Anecdotally, significant numbers of VET international students are motivated by the income they can earn working in Australia while enrolled in study. The completion of a qualification and any possibility of longer term migration is of a secondary importance.

A recent policy announcement relating to post graduation work rights for graduates from certain degrees relating to occupations assessed as being in shortage makes a number of these factors very explicit. It emphasises both the link with the labour market and support for the international education sector.

‘The Albanese Government is addressing skills shortages by extending post-study work rights for international students that have graduated from an Australian higher education provider. This will support businesses across the country and help rebuild the international education sector following the pandemic.’(Australian government 2023).

The Minister for Education commented:

“As well as delivering the skills and qualifications Australia needs, the measure will make Australia more attractive as a study destination, helping the recovery of the international education sector and boosting earnings from Australia’s education exports.”

Despite work rights after graduation being an incentive to undertake international education in Australia (and true for other countries as well), employment outcomes have not been particularly rosy. It is difficult for international graduates to compete with domestic graduates and the broad conclusion is that employment outcomes are not that great (see for example, Tang 2020, Tang *et al.* 2021a, 2021b).

As is the case with our study, the picture is quite nuanced. For example, Tang *et al.* 2014 show that education or health qualifications are more helpful than other fields for overseas graduates getting employment in regional areas.

One of the weaknesses of this literature (from our perspective) is that it is almost entirely focussed on university graduates. The exception is Buddelmeyer *et al.* 2013 who looked at employment outcomes over all levels of qualifications not only degrees for various migrant classes. They found, over all qualifications, ‘some limited evidence that former overseas students who have been granted permanent residency do jobs that do not match their training both in terms of the level of qualification and the field of study’ (page 37). In respect of non-degree qualifications 42% were in technicians and trade jobs, and 17.3% were working as labourers or machine operators and drivers (Buddelmeyer *et al.* 2013 ,table 10). However, we point out that Buddelmeyer and his colleagues were looking at data from a survey of migrants and the focus was on visa class not whether their qualification was obtained in Australia.

The purpose of this paper was to look at international students in VET in some detail – where they come from, the fields they study, and the outcomes on completion. In respect of the latter we are particularly interested in the extent to which international graduates are ending up in employment in areas of the labour market where there are either shortages or the long term demand is strong, at least according to the categorisation of occupations undertaken by the former National Skills Commission (now replaced by Jobs and Skills Australia).

The results of our study do not fly in the face of the earlier research. They are consistent with perceived wisdom that international education is associated with migration as well as skills acquisition and that employment outcomes are mixed. However, an important point is that the devil is in the detail. In particular, students come from different countries, undertake a range of qualifications and have different degrees of success in obtaining employment, particularly in respect of a job related to the training they have undertaken.

The main points to emerge from the study are:

- The country of origin for VETs students is similar to that of higher education students, with large numbers from Southern and Central Asia, North East Asia and South East Asia. However, in VET there are also substantial numbers of students from the Americas (excluding the US and Canada).
- There has been rapid growth in VET students in recent years in those from Southern and Central Asia, such that this group is by far the largest in 2019 and 2020.
- Provision of VET to international students is dominated by private providers. This is especially the case for the largest field of education – management and commerce.
- The demographic distribution varies considerably across the country groupings.
- Males make up over 70% of students from Southern and Central Asia, compared to 54.9% overall.
- The largest age group consists of those between 25 and 49 years, although the younger age group (15-24 years) makes up more than 50% of students from North America, Southern and Central Asia and North Africa and the Middle East.
- VET international students tend to undertake diplomas and Certificates III/IV with around one half having a diploma or higher qualification and a further 45% having a Certificate III/IV. VET students from Oceania and North Africa and the Middle East have the highest proportions undertaking lower level qualifications (18.7% and 14.7%, respectively).
- The most popular field of education is management and commerce (just over 50%). Other fields with substantial numbers of students are food, hospitality and personal services (12.8%), society and culture (9.7%) and engineering and related technologies (7.9%). Of the students undertaking management and commerce qualifications, around 70% are undertaking a diploma or higher qualification.
- The most popular course overall is a diploma in management and commerce, followed by a Certificate III/IV in the same field, and a Certificate III/IV in food, hospitality and personal services.
- International students make up a very substantial portion of students in courses leading to a range of occupations at the four digit ANZSCO level, notably general managers 1112 (57% of commencing students over 2016-2021 were international), contract, program and project administrators 5111 (36%), accommodation and

hospitality managers 1410 (78%), chefs 3513 (81%), cooks 3514 (47%), office and practice managers 5120 (52%) and motor mechanics 3212 (30%)⁵.

Mapping intended occupations to labour market categories (as defined by the former National Skills Commission) enables us to scrutinise the alignment of courses to labour market needs.

Overall the international students are more aligned to occupations in shortage or with strong long term demand than are domestic students. Moreover the completion rates of international students are higher than those for domestic students. However, there is a big gap between what international students aspire to and their actual employment outcomes. First, over 30% of the graduates have not managed to find employment at the time of the outcomes survey. Second, the success of graduates in finding a job where there is a shortage or strong long term demand (according to the National Skills Commission) varies considerably by field of education. Fields with relatively good alignment are food, hospitality and personal services (53.9% of graduates over 2017-2021 are in an occupation in shortage or strong long-term demand), architecture and building (46.1), health (45.5), education 42.4 and engineering and related technologies (38.1%). Graduates in information technology had particularly poor outcomes (24.5% in an occupation in shortage or strong long term demand).

The proportion of students undertaking further study is quite high with over 60% (2017-2021 data) of those on a student visa undertaking further study and 38% on a bridging visa. For those on a temporary graduate visa the figure was 23%. Very few of the graduates were undertaking further study in another country. We also note that just under 80% of those in further study in Australia were doing so at a higher level.

Do our findings have any lessons for policy? The findings that stand out are that on the whole the alignment between what is being studied and the labour market is pretty good, but the alignment between the jobs that graduates actually get and the courses they have undertaken is much looser. In particular, there is a very high number of VET international students undertaking business and commerce qualifications and relatively few are obtaining jobs associated with these qualifications or a job in an occupation in shortage or with strong long term demand. This is not to say that many do not find employment (and in a tight labour market individuals with no qualifications will be able to find employment relatively easily) but that the jobs they get have little to do with the qualifications that had been undertaken. In addition, we see high proportions of graduates continue with their study, mostly at a higher level. It would appear that many of these students see VET as a way of staying in Australia, rather than obtaining an immediate employment benefit. By contrast, graduates in hospitality, food and personal services are finding considerable employment in the area in which they have trained. This is a clear example of international education addressing an immediate skills shortage. Moreover, in a number of these areas international students constitute a very sizable proportion of the student cohort (around 80% of students

⁵ Note that these constitute the largest intended occupations for international students.

undertaking chef qualifications were international students, for example). The alignment between course and labour market needs is also fairly good in architecture and building, health, education and engineering and related technologies. Thus one could argue that the current set of parameters is fine if the main purpose of international VET education is to provide a source of revenue for the industry, but they are of modest benefit to questions of skills shortage. If the main purpose of international education in VET were to satisfy labour market needs then the distribution of students across fields of study would have to change; more chefs, cooks and motor mechanics and fewer graduates with management and commerce qualifications. In respect to the latter, it is also worth commenting that the beneficiary of the revenue is private providers, and therefore one would suspect that there are few spill over benefits to domestic consumers of VET.

It is interesting to note that the latest extension of post-study work rights focuses entirely on graduates with degrees, with a particular emphasis on health qualifications. The logic of the program – to address skills shortages and to assist the international education industry – suggests that we should consider adding other qualifications to this list. Obvious additions would be VET qualifications in food, hospitality and personal services and architecture and building, health, education and engineering and related technologies. If this is too broad a brush it would be a simple matter to identify courses aimed at specific occupations. At least such an amendment would put VET on a more equal footing relative to Higher Education.

References

Arora, P 2019, International student mobility from China and India: the influence of Australian immigration policy, and institutional and family factors on post-graduation destination outcomes, Swinburne University of Technology, Hawthorn, viewed 22 Feb 2023, <<http://hdl.handle.net/1959.3/452021>>.

Australian Government, 2023, Joint Media Release ,21 February 2023. Addressing skills shortages in key industries and rebuilding the international education sector, The Hon Jason Clare MP, Minister for Education, The Hon Clare O'Neil MP, Minister for Home Affairs

Baird, B (2010) *Stronger, simpler, smarter ESOS: supporting international students* Final report 2010 Review of the Education Services for Overseas Students (ESOS) Act 2000

Berquist, B, Hall, R, Morris-Lange, S, Shields, H, Stern, V & Tran, L 2019, Global perspectives on international student employability, International Education Association of Australia, Melbourne, viewed 22 Feb 2023, <<https://www.ieaa.org.au/research/global-perspectives-on-international-student-employability>>.

Buddelmeyer, H, Ven, J & Zakirova, R 2013, Graduate employment outcomes for international students, Melbourne Institute of Applied Economic and Social Research, Melbourne, viewed 22 Feb 2023, <http://www.melbourneinstitute.com/downloads/labour/1-12_FINAL_REPORT.pdf>.

Burke, G 2022, *Funding vocational education in Australia: 1970 to 2020*, VET Knowledge Bank, NCVET, Adelaide, <<https://www.voced.edu.au/vet-knowledge-bank-landmark-documents-funding-historical-overview>>.

Chew, J 2019, Economic opportunities and outcomes of post-study work rights in Australia, International Education Association of Australia, Melbourne, viewed 22 Feb 2023, <<https://www.ieaa.org.au/research/post-study-work-rights>>.

Karmel, T 2022, The VET sector post Covid-19, Mackenzie Research Institute

National Skills Commission 2021, Skills Priority List, June 2021.

Ng, W-H, Menzies, J & Zutshi, A 2019, 'Facilitators and inhibitors of international postgraduate students' university-to-work transition', *Australian Journal of Career Development*, vol.28, no.3, pp.186–196.

Rizvi, A 2019, 'Re-emergence of dodgy VET colleges', *Pearls and irritations: John Menadue's public policy journal*, 12 December, viewed 14 February 2022 <<https://johnmenadue.com/abul-rizvi-re-emergence-of-dodgy-vet-colleges/>>.

Song, X, Cadman, K 2013, 'Education with(out) distinction: beyond graduate attributes for Chinese international students', *Higher Education Research and Development*, vol.32, no.2, pp.258–271.

- Sonnenschein, K, Ferguson, J 2020, 'Developing professional communication skills: perceptions and reflections of domestic and international graduates', *Journal of University Teaching and Learning Practice*, vol.17, no.3, pp.1–16, viewed 22 Feb 2023, <<https://ro.uow.edu.au/jutlp/vol17/iss3/5>>.
- Tang, A 2020, *The shifting labour market position of international graduates in Australia*, University of Queensland, [St Lucia], viewed 22 Feb 2023, <<https://espace.library.uq.edu.au/view/UQ:680fa82>>.
- Tang, A, Perales, F, Rowe, F & Baxter, J 2021, *From bad to worse: examining the deteriorating labour market outcomes of international graduates in Australia*, LCC working paper series, no. 2021-10, Institute for Social Science Research, University of Queensland, St Lucia, viewed 22 Feb 2023, <<https://lifecoursecentre.org.au/working-papers/from-bad-to-worse-examining-the-deteriorating-labour-market-outcomes-of-international-graduates-in-australia/>>.
- Tang, A, Perales, F, Rowe, F & Baxter, J 2021, *The going gets rougher: exploring the labour market outcomes of international graduates in Australia*, LCC working paper series, no. 2021-04, Institute for Social Science Research, University of Queensland, St Lucia, viewed 22 Feb 2023, <<https://lifecoursecentre.org.au/working-papers/the-going-gets-rougher-exploring-the-labour-market-outcomes-of-international-graduates-in-australia/>>.
- Tang, A, Rowe, F, Corcoran, J & Sigler, T 2014, 'Where are the overseas graduates staying on?: overseas graduate migration and rural attachment in Australia', *Applied Geography*, vol.53, pp.66–76.
- Tran, L, Tan, G, Bui, H & Rahimi, M 2022, 'International graduates on temporary post-graduation visas in Australia: employment experiences and outcomes', *Population, Space and Place*, [preprint], viewed 22 Feb 2023, <<https://doi.org/10.1002/psp.2602>>.
- Trevena, P 2019, *Post study work visa options: an international comparative review*, Scottish Government Social Research, Edinburgh, viewed 22 Feb 2023, <<https://www.gov.scot/publications/post-study-work-visa-options-international-comparative-review/pages/5/>>.