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WORKING PAPER SERIES

THE GOING GETS ROUGHER: EXPLORING THE LABOUR MARKET OUTCOMES OF INTERNATIONAL GRADUATES IN AUSTRALIA

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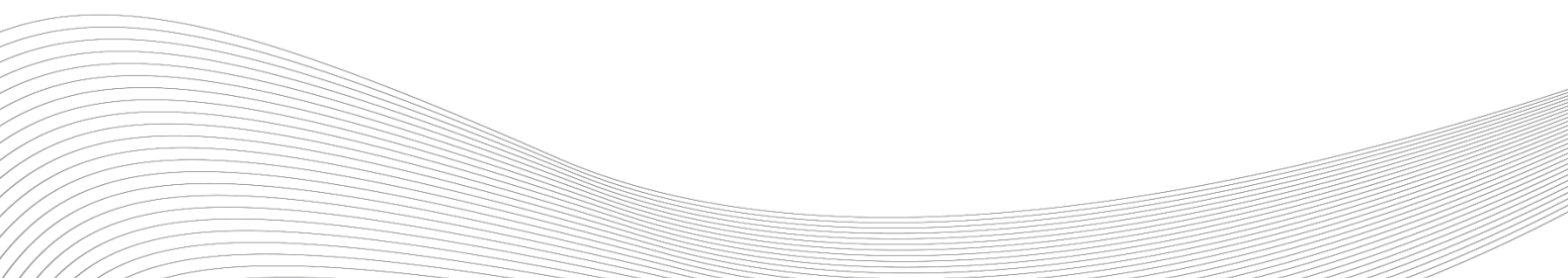


NON-TECHNICAL SUMMARY

The retention of international graduates has been deemed a viable approach to redressing skill shortages in many countries mainly owing to their local academic credentials. These countries - including Australia - have put in place a range of strategies designed to retain international graduates after the completion of their studies. Since 1999, Australia has maintained post-study migration and employment pathways offering work and residence rights to eligible international graduates. Similar to other countries, emerging evidence, albeit fragmented, indicates that international graduates struggle to integrate into the Australian labour market. This study utilises the Australian Graduate Survey to examine patterns, trends and changes in the labour market outcomes of international graduates who remained in Australia between 1998 and 2015.

This study shows that the percentage of international graduates who remained in Australia with the intention to work more than doubled between 1998 and 2015. The more recent cohorts, however, tended to come from non-English-speaking backgrounds, stay on with temporary visas, and lack local work experience, all of which have been linked to poorer outcomes in the Australian labour market. In fact, this study reveals a clear trend of rising economic inactivity, unemployment, part-time employment and qualification mismatch amongst international graduates who remained in Australia over the years. These results highlight the vulnerability of international graduates in the face of evolving immigration policies and weakening labour market for recently qualified tertiary graduates during this period.

This study points to a need to review and strengthen existing policies and interventions to help international graduates integrate into the Australian labour market - if Australia is to fully utilise and benefit from their skills and knowledge. Policies and interventions should incorporate ways to better prepare international graduates for the labour market; improving paid work experience in the final year of study is likely to be a step in the right direction.



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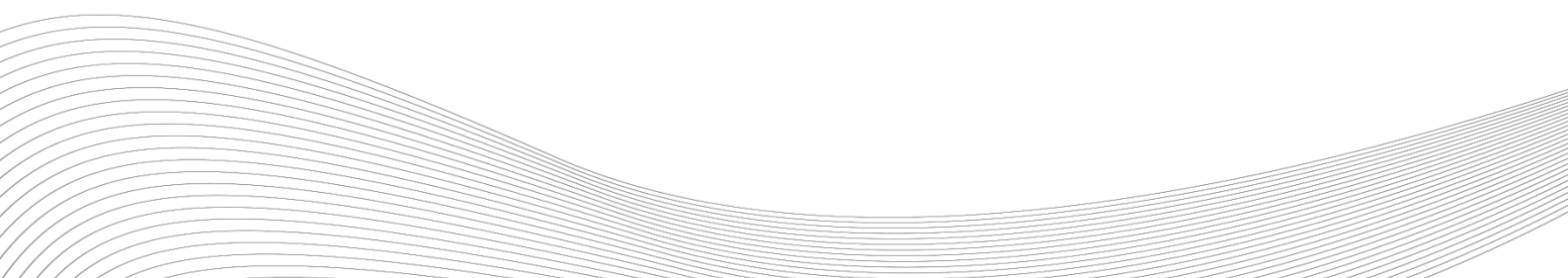
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ABSTRACT

The retention of international graduates has been deemed a viable approach to redressing skill shortages in many countries mainly owing to their local academic credentials. Notwithstanding, there is growing, albeit fragmented, evidence that international graduates who stayed on after course completion struggle to integrate into the host labour market. Building on this evidence, this study examines patterns, trends and changes in the labour market outcomes of international graduates who remained in Australia at four months after course completion between 1998 and 2015. Drawing on the Australian Graduate Survey, this study shows that the share of international graduates who stayed on with the intention to work more than doubled during this period. The more recent cohorts, however, tended to come from non-English-speaking backgrounds, stay on with temporary visas and lack local work experience, all of which have been linked to poorer outcomes in the Australian labour market. In fact, this study reveals a clear trend of increasing economic inactivity, unemployment, part-time employment and qualification mismatch amongst international graduates who remained in Australia over the years. The worsening labour market outcomes highlight the vulnerability of international graduates against a backdrop of socio-political and economic changes in Australia. These findings point to a need to review and strengthen existing policies and interventions to help international graduates integrate into the host labour market.

Keywords: Australia; international graduates; labour market; skill utilization; skilled migration; study-to-work transition

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1. Introduction

In 1995, an estimated 1.7 million tertiary students worldwide enrolled in a higher education institution located outside their country of origin (OECD 2017). This number rose to approximately three million in 2005, and five million in 2015 (OECD 2017). Parallel to this sizable expansion in the international education market is the changing value of international students to their host country. Other than being a consumer of education, international students are increasingly seen as a convenient and advantageous source of high-skilled labour. Compared to high-skilled labour recruited offshore, international students graduating from local higher education institutions (international graduates hereinafter) are believed to stand a better chance of integrating into the host labour market given their local academic credentials and familiarity with local language, legislation and customs (Hawthorne 2005; Ziguras and Law 2006; Suter and Jandl 2008). They are also regarded as ‘labour capacity without the social burden’ compared to their offshore counterparts who are more likely to arrive with dependants (Robertson 2014, 1922). These presumptions, amongst other things, have contributed to the introduction of post-study migration and employment pathways to retain international graduates in many countries - including the top five study destinations: Australia, France, Germany, the United States, and the United Kingdom (Suter and Jandl 2008; OECD 2014, 2017).

Despite their desirability, international graduates struggle to integrate into the host labour market (Bond et al. 2007; Brekke 2007; McGrath, Madziva, and Thondhlana 2017). Taking Australia as an example, emerging evidence highlights the higher prevalence of economic inactivity, unemployment, part-time employment and education-job mismatch amongst international graduates compared to local graduates and other skilled migrants (Birrell, Hawthorne, and Richardson 2006; Hawthorne 2010; Trevelyan and Tilli 2010; Li and Miller 2013; Hawthorne and To 2014; Faggian, Corcoran, and Rowe 2016). These unfavourable outcomes are a matter of concern, as they undermine the rationale behind the retention of international graduates. As Hawthorne (2005, 663) rightly points out, positive labour market integration is ‘the ultimate public justification of the success of the programme’. As could be expected, the poor integration of international graduates in the Australian labour market has sparked debates and anxieties about their merits and intentions, as well as the policies governing international education and skilled migration (Birrell and Healy 2008; Birrell, Healy, and Kinnaird 2009; ABC 2015; Faggian, Corcoran, and Rowe 2016). International graduates have since been reframed as the ‘deficient workers, scheming backdoor migrants, or hapless victims of a flawed education and migration system’ (Robertson 2011, 2206).

Importantly, their poor prospects and the subsequent backlash have threatened the attractiveness and reputation of Australia as a study destination amongst prospective international students (Robertson 2011; Blackmore et al. 2014). In the light of these socio-political and economic significance, this study further explores the labour market position of international graduates in the host country using Australia as a case study.

Australia is widely considered a front-runner in international graduate retention due to the development and maintenance of post-study migration and employment pathways over the last two decades (Peykov 2004; Gribble and Blackmore 2012). Growing efforts have since been devoted to study the integration of international graduates into the Australian labour market. In addition to unveiling broad patterns of their labour market outcomes, existing studies have explored the forces underlying their unfavourable position. Low levels of English language proficiency have been identified as a potential driver, along with temporary residency status and a general lack of work readiness and local discipline-related work experience (Birrell and Healy 2008; Birrell, Healy, and Kinnaird 2009; Li and Miller 2013; Hawthorne and To 2014; Blackmore, Gribble, and Rahimi 2017). Much of the prior work, however, has drawn on qualitative research that are typically descriptive and cannot be generalised to the broader international graduate population. In contrast, there is a dearth of more objective and precise quantitative analysis on the subject (Hawthorne and To 2014). The literature also offers a fragmented understanding of their experiences in the Australian labour market given the focus on selected subpopulations and individual years. Very little is known about patterns, trends and changes in their labour market position since the initiation of post-study migration and employment pathways in 1999. On that account, the present study examines the labour market outcomes of international graduates who remained in Australia at four months after course completion between 1998 and 2015. Drawing on the Australian Graduate Survey (AGS), this study looks into the level of economic inactivity, unemployment, part-time employment and education-job mismatch during this period. The following section establishes the context for analysis by assessing the employment prospects for international graduates in Australia between 1998 and 2015, taking into account major changes in the immigration framework and labour market over the last two decades.

2. Troubled transitions in an evolving socio-political and economic environment

While Australia entered the international education market in the 1980s, there were no clear post-study migration and employment pathways for international graduates at first (Hawthorne 2010). International graduates could apply to other immigration programmes available, but the burdensome requirements placed them in an unfavourable position. Specifically, the main immigration programme - the skilled migration programme - required at least three years of discipline-related work experience, which most recently qualified tertiary graduates lacked (Hawthorne 2005, 2010; Arkoudis et al. 2009). In the 1990s, international graduate retention - or a lack thereof - received considerable public and academic attention, responding to emerging evidence that international graduates compared favourably with local graduates in the Australian labour market (Birrell and Hawthorne 1999). A major review of the skilled migration programme in 1999, *The Review of the Independent and Skilled-Australian Linked Categories*, removed the requisite on work experience in an effort to retain international graduates (DIMA 1999; Hawthorne 2010). It was believed that international graduates who were ‘characterised by youth, advanced English language skills, fully recognised qualifications, locally relevant professional training, plus a high degree of acculturation on completion of such Australian degrees’ (Hawthorne 2005, 686) would make an ‘immediate positive contribution to the Australian economy, labour market and budget’ (DIMA 1999, vii).

This policy shift has enabled international graduates to apply for permanent residency immediately after course completion, an option that was beyond the reach of most graduates in the past. Importantly, the shift rested upon the traditional migration paradigm of permanent settlement, which was likely to have significant implications for the labour market integration of international graduates. Specifically, the traditional migration paradigm of permanent settlement fostered preferential treatment of permanent residents in the Australian labour market (Gregory 2014). Australian permanent residency is often listed as a prerequisite to apply for jobs, including apprenticeships, internships and graduate programmes that serve as the main entry point into the labour market (Jackling 2007; Blackmore et al. 2014). This requirement is particularly common in industries aligning with some of the most popular fields of study amongst international graduates, such as accounting and engineering (GCA 2014; Blackmore et al. 2014, 2017).

The focus of international graduate retention in Australia, however, has slowly shifted from permanent settlement to temporary retention over the years. The prerequisites for permanent residency applications have been gradually tightened, alongside the introduction of new temporary visas aimed at the retention of international graduates (Robertson 2011; Spinks 2016). Although this new focus reflects the growing emphasis on temporary migration in the broader immigration framework, it further seeks to remove any real or perceived direct link between international education and permanent migration (Robertson 2011; Gribble and Blackmore 2012). It also intends to provide international graduates with a chance to obtain local discipline-related work experience or to improve English language proficiency before applying for permanent residency (Spinks 2016). The new temporary visas typically grant full legal work rights similar to those offered by permanent residency (Robertson 2014). Nevertheless, the temporary visas present considerable normative barriers to the labour market integration of international graduates given the role of permanent residency (Robertson 2014). Not only are employers hesitant to hire international graduates who hold a temporary visa, but also these international graduates have been found to delay the transition to work (Blackmore et al. 2014, 2017; Robertson and Runganaikaloo 2014). In hope of achieving a level playing field, many international graduates have prioritised their permanent residency applications over career progression in recent years (Blackmore et al. 2014, 2017).

On the other hand, structural changes in the Australian labour market have weakened the demand for recently qualified tertiary graduates. For instance, skill polarisation arising from the shift towards a service-based economy has lessened full-time entry-level jobs suitable for recently qualified tertiary graduates (Anlezark 2011; The Smith Family 2014). Job growth has mainly concentrated on high-skill senior roles, while the remainder has mostly occurred in retail and service jobs (Anlezark 2011; The Smith Family 2014). Newly qualified tertiary graduates typically lack the professional and managerial skills and experience needed to apply for high-skill senior roles (Hawthorne 2010; Blackmore, Gribble, and Rahimi 2017). In contrast, jobs in retail and services usually have fewer requirements. Nonetheless, these jobs tend to be casual, low skill and low paying, with limited opportunities for career progression (The Smith Family 2014). These bleak job prospects for newly qualified tertiary graduates were further compounded by a 'sluggish' economy, resulting from the Global Financial Crisis and the end of the resource boom in the early 2010s (Borland 2011; FYA 2013). Australian employers were increasingly reluctant to invest in apprenticeships, internships and graduate programmes (The Smith Family 2014). Although these opportunities are usually not available to international graduates due to their residency

status, the lower provision might have further depressed their chance of securing these critical pathways to the Australian labour market.

Taken together, the literature indicates that the employment prospects of international graduates may have declined over the last two decades. However, while recent studies have provided strong evidence of worsening full-time employment rates and starting salaries amongst local graduates (Anlezark 2011; GCA 2015), there is a dearth of robust analogous evidence for international graduates. As pointed out earlier, existing knowledge of the labour market experiences of international graduates in Australia is largely based on qualitative research and those limited to selected subpopulations and individual years. The present study will fill this knowledge gap by offering a systematic account of patterns, trends and changes in the labour market outcomes of international graduates who remained in Australia between 1998 and 2015. Specifically, it will assess the prevalence of economic inactivity, unemployment, part-time employment and education-job mismatch.

3. Data and methods

3.1 The Australian Graduate Survey

This study draws on the AGS to examine the labour market outcomes of international graduates who remained in Australia between 1998 and 2015. Funded by the national education department, the AGS was conducted annually between 1972 and 2015 to capture the career progression of tertiary graduates from all Australian universities and a sample of other higher education providers, mainly the Technical and Further Education institutions and colleges (GCA 2019). The survey focused on their labour market status, employment outcomes and job search behaviour at about four months after course completion. It also collected an array of socio-demographic and skill characteristics important to assessing labour market outcomes, such as gender, language background, Australian citizenship and residency status, and paid work experience in the final year of study. The survey was distributed by participating higher education institutions to their recently qualified tertiary graduates, mainly using paper or online forms. It reported a response rate of 41-43% for international graduates (and 58-63% for domestic graduates), which is generally deemed satisfactory for surveys administered to an entire population through similar means.

3.2 Identifying international and domestic graduates

This study examines the labour market outcomes of international graduates relative to those of domestic graduates. To identify international and domestic graduates in the AGS, this

study follows the official reports of the survey and mainly utilises information on fee-paying status (GCA 2008). International graduates are defined as those who were wholly or mainly an international fee-paying student for the course they had just completed, whereas domestic graduates include those who were wholly or mainly an Australian fee-paying student or a recipient of government assistance under the Higher Education Contribution Scheme loan programme. The graduates, nonetheless, are identified using information on Australian citizenship and residency status between 2002 and 2004 due to changing question wording for fee-paying status during this period. Specifically, domestic graduates are defined as those who self-identified as a citizen or permanent resident of Australia, whereas international graduates are neither a citizen nor permanent resident.

3.3 Analysing labour market outcomes

To examine graduates' labour market outcomes, this study first takes into account their population size and composition over the observation period. In addition to the broader socio-political and economic environments, a systematic account of the magnitude and nature of the available skills and knowledge is critical to contextualising subsequent analyses of labour market performance. To this end, this study examines the number and share of international and domestic graduates who remained in Australia after course completion, along with socio-demographic and skill characteristics that are likely to shape their transition to the Australian labour market. Specifically, the analysis takes into consideration their age, gender, language background, disability status, Australian citizenship and residency status, country of permanent residency, highest level of education, field of study, paid work experience in the final year of study, and further study status.

The analyses of labour market outcomes focus on international and local graduates located in Australia on the survey reference date. Further, as is commonplace in labour market studies (Kim 2010; OECD 2014b; Faggian, Corcoran, and Rowe 2016), two groups of individuals are omitted from the analyses: (1) those who are typically not available for or not fully committed to work, specifically, those who fall outside the working age of 15 to 64 years or are undertaking further study; and, (2) those who worked in occupations with poorly defined skill requirements, specifically, legislators, members of the armed forces, and self-employed individuals. Table 1 presents the size of the total sample and the subsample used to analyse labour market outcomes for the 18 years between 1998 and 2015.

Table 1 Sample size, international and domestic graduates, 1998-2015

Measures		Total sample			Subsample for analyses of labour market outcomes		
		Year	D	I	Year	D	I
Fee-paying status		1998	73,615	3,425	1998	48,838	465
		1999	66,933	4,787	1999	43,603	589
		2000	58,737	9,384	2000	38,716	3,668
		2001	52,368	5,454	2001	34,178	935
Australian citizenship and residency status		2002	57,844	4,641	2002	37,991	633
		2003	66,147	7,986	2003	44,200	1,391
		2004	74,252	8,687	2004	48,990	1,778
Fee-paying status		2005	76,653	10,872	2005	53,013	3,258
		2006	72,612	14,215	2006	50,528	5,104
		2007	75,568	17,394	2007	52,305	6,921
		2008	80,993	18,857	2008	57,170	8,341
		2009	85,527	21,634	2009	59,450	10,055
		2010	87,806	23,186	2010	61,227	10,295
		2011	93,340	26,010	2011	64,623	11,439
		2012	95,461	26,887	2012	65,371	11,393
		2013	96,756	24,891	2013	66,411	10,236
		2014	100,545	24,143	2014	68,925	9,702
		2015	92,730	20,745	2015	63,922	8,910
		Total	1,407,887	273,198	Total	959,461	105,113

Given the multifaceted nature of labour market performance, this study examines four labour market indicators: economic inactivity, unemployment, part-time employment, and education-job mismatch. Using information on paid-work and job-seeking statuses on the survey reference date, respondents who were not engaged in nor actively seeking paid work are categorised as economically inactive. Those respondents who were deemed economically active are then divided into two groups to represent their employment status; the first identifies those who were not engaged in but were actively seeking paid work (i.e., unemployed), whereas the second captures those who were participating in paid work (i.e., employed). The latter are further categorised according to type of employment into part- and full-time employed. Turning to education-job mismatch, this study follows the Organisation for Economic Co-operation and Development (2014b) and considers three types of mismatch: (1) qualification mismatch - to capture misalignment to level of education; (2) field-of-study mismatch - to capture misalignment to field of study; and, (3) skill mismatch - to capture misalignment to non-technical skills.

To identify qualification mismatch, this study applies the job analysis method using the Australian and New Zealand Standard Classification of Occupations (ANZSCO), First Edition, Revision 1 (ABS 2009) as the analytic framework. Specifically, the highest level of education for the respondents is compared to that expected for their main occupation at the broadest level of the ANZSCO (i.e., Major Groups, 1-digit level). Respondents are considered mismatched if their educational attainment did not match that prescribed for their occupation. This study focuses on over-qualified graduates (i.e., those respondents who held a higher level of education than the prescribed level) given the greater prevalence and negative effects of this mismatch (Hartog 2000; Fleming and Kler 2008; Li 2013).

This study also employs the job analysis method to capture field-of-study mismatch. Specifically, this study follows the OECD (2014b) and utilises an analytic framework developed by Wolbers (2003) to determine the alignment between field of study and occupation drawing on the International Standard Classification of Occupations 1998 and the International Standard Classification of Education 1997. In this study, the analytic framework was adopted to identify appropriate occupations at the Unit Group (4-digit) level of the ANZSCO for each field of study at the Broad Field (2-digit) level of the Australian Standard Classification of Education. Respondents who did not work in an occupation deemed suitable for their field of study are considered mismatch. The analyses on field-of-study mismatch, however, are limited to a shorter timeframe between 2006 and 2015 given temporally inconsistent occupational data resulted from changes in coding scheme prior to 2006.

For skill mismatch, this study uses the direct self-assessment method and analyses graduate perceptions of the importance of non-technical skills acquired during the recent course to their employment. In this case, respondents are considered mismatched if they indicated that the skills were *not important* to their employment, whereas those who responded *formal requirement*, *important* or *somewhat important* are categorised as matched. Notwithstanding, this information is only available from 2008, restricting the analyses on skill mismatch to a shorter timeframe between 2008 and 2015. The next sections present a snapshot of the volume and composition of international graduate population in Australia over the two decades, followed by an examination of their labour market outcomes during this period.

4. Changes in the volume and composition of the international graduate population

Figure 1 shows the percentage of international and domestic graduates located in Australia on the survey reference date between 1998 and 2015. Broadly speaking, the share of international graduates remaining in Australia doubled over the 18 years. In 1998 and 1999, only 30% of international graduates stayed on following course completion. The share then grew rapidly, with the most significant rises occurring between 2005 and 2009. The share seems to have plateaued since then, with around two-thirds staying on after course completion. In addition, the analysis pointed to an important change in their rationale to remain in Australia. Specifically, the results reveal a general decline in the percentage of international graduates pursuing further study (Figure 2). This finding suggests that more international graduates are staying on for employment over time.

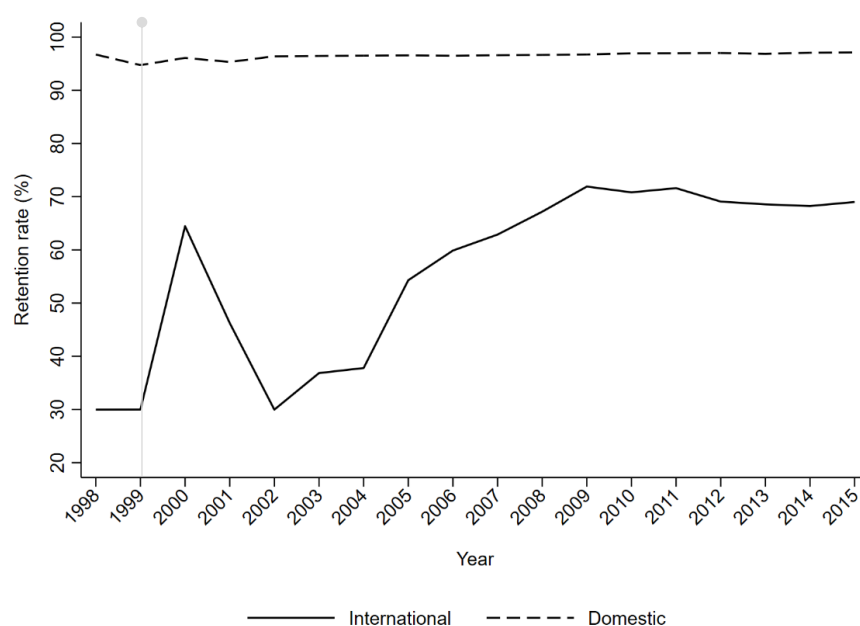


Figure 1 Retention rate, international and domestic graduates, 1998-2015

Notes: The grey vertical line indicates the introduction of post-study migration and employment pathways. The results between 2002 and 2004 should be interpreted with caution owing to changes in the definition of domestic and international graduates.

Source: Australian Graduate Survey, 1998-2015

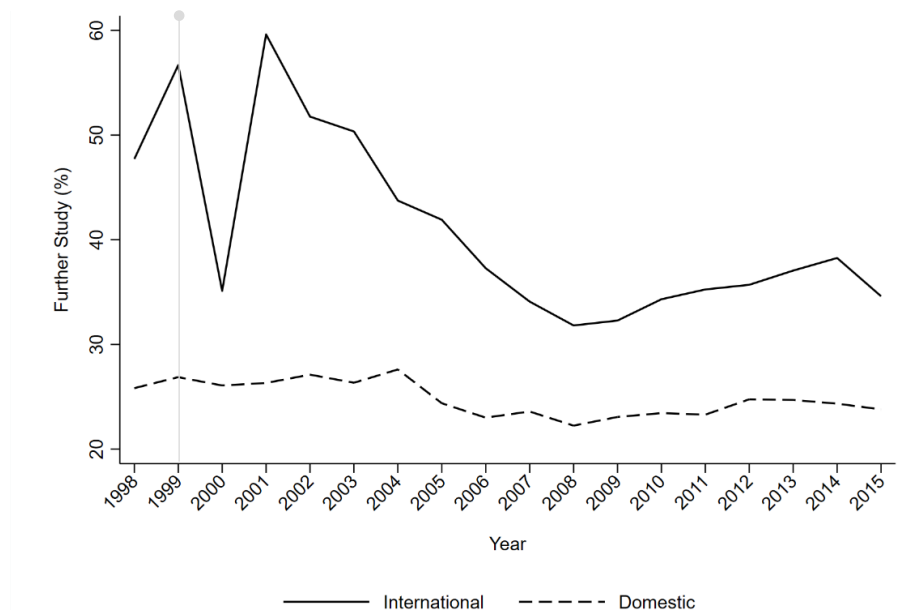


Figure 2 Further study, international and domestic graduates, 1998-2015

Notes: The grey vertical line indicates the introduction of post-study migration and employment pathways. The results between 2002 and 2004 should be interpreted with caution owing to changes in the definition of domestic and international graduates.

Source: Australian Graduate Survey, 1998-2015

Table 2 presents the socio-demographic and skill characteristics of international and domestic graduates who did not pursue further education to shed light on the skills and knowledge available for full-time participation in the Australian labour market. Broadly speaking, international graduates who remained in Australia between 1998 and 2015 were typically young adults in their mid-twenties with a mean age of 26.5 years and a median age of 25.0 years. The majority were non-native English-speakers (77.1%). Only a small share self-identified as having a disability (2.0%), while one-fifth (19.8%) reported having attained Australian citizenship or permanent residency by the survey reference date. Further, more than half had completed a postgraduate degree (51.5%) or worked in the final year of study (55.1%). Most international graduates were trained in Management and Commerce (45.4%), followed by Information Technology (13.9%), Health (10.8%), Engineering and Related Technologies (9.4%) and Society and Culture (6.1%).

Table 2 Socio-demographic and skill characteristics, international and domestic graduates, 1998-2015

Characteristics	1998-2002		2003-2007		2008-2012		2013-2015		Total	
	D	I	D	I	D	I	D	I	D	I
Socio-demographic										
Mean age, year	29.7	28.5	29.7	26.2	29.7	26.3	29.8	26.6	29.7	26.5
Median age, year	25.0	26.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Male, %	38.3	42.7	36.7	52.3	37.4	50.5	37.5	47.7	37.4	49.6
Non-English-speaking background, %	17.0	38.3	14.8	77.8	13.5	79.1	14.3	81.7	14.7	77.1
Disability, %	3.2	4.2	2.7	3.4	2.7	1.4	3.6	1.6	3.0	2.0
Australian citizenship or permanent residency, %		67.1		26.8		15.8		12.0		19.8
Skill										
Highest level of qualification, %										
1 Postgraduate degree	18.2	30.9	19.6	47.6	23.3	53.9	25.9	54.3	21.8	51.5
2 Graduate diploma and graduate certificate	13.3	12.0	11.8	4.1	12.6	3.7	11.3	2.9	12.3	4.1
3 Bachelor degree	67.1	56.6	67.5	48.1	63.4	42.3	62.1	42.6	65.0	44.3
4 Advanced diploma and diploma	1.2	0.5	1.0	0.1	0.7	0.1	0.7	0.2	0.9	0.2
5 Certificate and other education	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.1
Field of study, %										
1 Natural and Physical Sciences	6.9	5.3	5.2	3.2	5.1	4.3	5.3	4.4	5.6	4.2
2 Information Technology	4.9	10.9	5.1	23.5	2.9	12.6	2.8	10.9	3.9	13.9
3 Engineering and Related Technologies	5.7	6.7	5.1	9.8	5.5	8.6	6.2	11.1	5.6	9.4
4 Architecture and Building	2.1	3.7	1.9	2.0	2.6	2.0	2.7	2.7	2.3	2.3
5 Agriculture, Environmental and Related Studies	1.5	0.4	2.2	0.5	1.7	0.8	1.5	0.9	1.7	0.7
6 Health	16.8	11.2	17.0	7.5	19.4	11.0	21.1	12.4	18.5	10.8
7 Education	16.8	12.8	17.3	2.9	15.8	2.7	15.2	3.1	16.3	3.5
8 Management and Commerce	22.4	32.4	21.5	41.1	21.6	48.4	19.5	45.6	21.3	45.4
9 Society and Culture	17.7	9.6	18.3	5.2	18.7	6.1	18.6	5.8	18.4	6.1
10 Creative Arts and Services	5.3	7.0	6.4	4.2	6.8	3.6	7.0	3.2	6.4	3.8
Work experience during final year of study, %	82.5	71.5	84.3	59.9	83.0	54.4	81.8	49.8	83.0	55.1
Sample size	218,310	6,773	264,528	19,283	328,758	53,959	213,037	30,274	1,024,633	110,289

Notes: D and I refer to domestic and international graduates, respectively. The percentages are calculated based on domestic or international graduates who were located in Australia and were not engaged in further education. The percentages may not add up due to rounding. The results between 2002 and 2004 should be interpreted with caution owing to changes in the definition of domestic and international graduates.

Source: Australian Graduate Survey, 1998-2015

Compared to local graduates, international graduates were on average younger and tended not to have a disability, which was presumably linked to the age and health requirements of their work and residence visas. The international graduate population was more gender balanced and, predictably, encompassed a much larger percentage of non-native English-speakers. In regard to skill characteristics, international graduates tended to hold a higher level of education than local graduates. Further, they demonstrated stronger preferences for Management and Commerce as well as Information Technology. In contrast, they were underrepresented in Health, Education, as well as Society and Culture. The percentage of international graduates who worked in the final year of study (55.1%) was also appreciably smaller than that for local graduates (83.0%).

Importantly, the results reveal some notable changes in the socio-demographic and skill characteristics of international graduates who remained in Australia between 1998 and 2015. Specifically, the share of non-native English-speakers grew substantially from an average percentage of 38.3% in 1998-2002 to 81.7% in 2013-2015. The percentage of international graduates who had attained Australian citizenship or permanent residency by the survey reference date fell markedly from 67.1% in 1998-2002 to 12.0% in 2013-2015. Meanwhile, there was a clear trend of rising educational attainment amongst international graduates. The average percentage of postgraduate degree holders increased noticeably from 30.9% in 1998-2002 to 54.3% in 2013-2015, in contrast to a decreasing share of bachelor graduates from 56.6% to 42.6%. The percentage of international graduates who worked in the final year of study also dropped considerably from 71.5% in 1998-2002 to 29.8% in 2013-2015.

The changes in the volume and composition of the international graduate population point to additional challenges to their transition to the Australian labour market. Amongst other things, more international graduates remained in Australia on temporary visas, seemingly with the intention to work. Nonetheless, temporary residency status has been reported to constrict work opportunities available to international graduates and impede their transition to work (Blackmore et al. 2014, 2017; Robertson 2014; Robertson and Runganaikaloo 2014). This unfavourable position may be compounded by compositional changes in language background and work experience in the final year of study. Specifically, the rising share of non-native English-speakers suggests declines in English language proficiency critical to the integration into the Australian labour market (Birrell 2006; Arkoudis et al. 2009; Hawthorne 2010; Hawthorne and To 2014). The lack of local, discipline-related work experience amongst the recent cohorts is likely to also

compromise their readiness and capacity to gain a foothold in the labour market (Birrell, Healy, and Kinnaird 2009; Blackmore, Gribble, and Rahimi 2017).

5. Deterioration in the labour market outcomes of international graduates

Figure 3 shows the levels of economic inactivity, unemployment, part-time employment and education-job mismatch amongst international and domestic graduates between 1998 and 2015. Broadly speaking, most international graduates participated in the Australian labour market, with around one-tenth being economically inactive on the survey reference date. Notwithstanding, the employment outcomes for the economically active international graduates were somewhat unfavourable. In addition to a high level of unemployment (27.4%) and part-time employment (47.5%), they tended to take up occupations that did not match their educational attainment. 48.3% of international graduates who were employed between 1998 and 2015 were over-qualified for their occupations. Further, 31.2% of international graduates from the 2006-2015 cohorts experienced field-of-study mismatch, whereas skill mismatch affected 19.5% of the 2008-2015 cohorts. Consistent with previous studies (Trevelyan and Tilli 2010; Li and Miller 2013; Hawthorne and To 2014; Faggian, Corcoran, and Rowe 2016), international graduates are found to fare worse than their domestic counterparts on all labour market indicators considered in the present study: economic inactivity (11.5% vs 3.4%), unemployment (27.4% vs 7.6%), part-time employment (47.5% vs 23.7%), qualification mismatch (48.3% vs 25.1%), field-of-study mismatch (31.2% vs 22.2%), and skill mismatch (19.5% vs 13.7%).

The results further reveal important changes in the labour market performance of international graduates between 1998 and 2015. For example, their labour market outcomes fluctuated considerably in the early years. While economic inactivity, unemployment, part-time employment and qualification mismatch surged in 1999, these labour market indicators saw a sharp fall in the following year to a level lower than that reported in 1998. The 1999 cohort might have delayed their transition to work in anticipation of the new post-study migration and employment pathways. On the other hand, improved outcomes in 2000 possibly reflect the initial policy focus on permanent settlement and the importance of permanent residency in the Australian labour market.

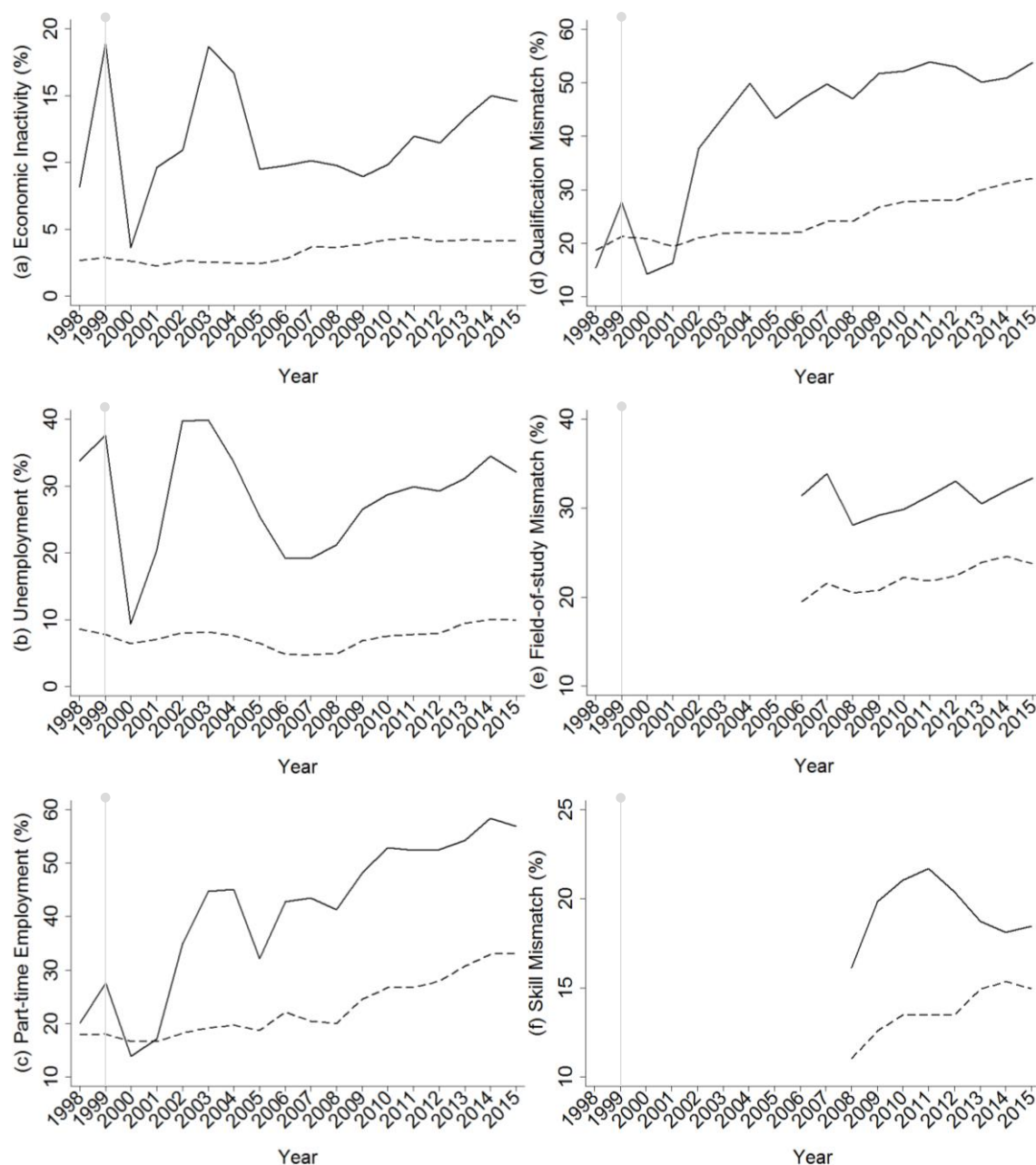


Figure 3 Labour market performance, international and domestic graduates, 1998-2015

Notes: The grey vertical lines indicate the introduction of post-study migration and employment pathways. This analysis is limited to domestic or international graduates in Australia who were between 15 and 64 years of age, were not engaged in further education, were not self-employed, and were not working as a member of the armed forces or a legislator. The results between 2002 and 2004 should be interpreted with caution owing to changes in the definition of domestic and international graduates. The timeframe for field-of-study mismatch and skill mismatch is restricted to a shorter period due to limitations in data availability.

Source: Australian Graduate Survey, 1998-2015

Nevertheless, the labour market outcomes of international graduates have since worsened. Specifically, economic inactivity quadrupled from 3.6% in 2000 to 14.6% in 2015, while part-time employment rose from 14.0% to 56.8%. Meanwhile, there was a threefold increase in the levels of unemployment (9.4% to 32.1%) and qualification mismatch (14.2% to 53.8%). Field-of-study mismatch also grew marginally from 31.4% in 2006 to 33.4% in 2015, as did skill mismatch between 2008 (16.1%) and 2015 (18.5%). Consistent with prior studies (Anlezark 2011; GCA 2015), the results also point to deteriorating labour market outcomes amongst domestic graduates. In particular, part-time employment grew appreciably from 16.7% in 2000 to 33.2% in 2015, whereas qualification mismatch rose from 20.8% to 32.2%.

Interestingly, the analysis also indicates that international graduates performed somewhat favourably in the Australian labour market in the early years. In fact, Figure 3 shows that international graduates once outperformed domestic graduates in two labour market indicators: they were less likely to work part-time or experience qualification mismatch in 2000. Further, the results found no significant differences in the levels of part-time employment and qualification mismatch between international and domestic graduates in 2001. These results corroborate the earlier observations that motivated the policy change to retain international graduates (Birrell and Hawthorne 1999). As Figure 3 shows, it is not until 2002 that international graduates began faring worse than local graduates in all four labour market indicators considered in the present study.

The results further reveal that the gaps in the labour market performance of international and domestic graduates have widened since then. While domestic graduates were also more susceptible to economic inactivity, unemployment, part-time employment and qualification mismatch over time, the change was more pronounced for international graduates. In that regard, the gap for economic inactivity grew by 2.3 percentage points between 2002 and 2015. The increase was even more considerable for part-time employment (6.8 percentage points) and qualification mismatch (4.9 percentage points). Nevertheless, the gaps for field-of-study mismatch and skill mismatch seemed to have narrowed marginally over the respective period of analysis (2.2 and 1.6 percentage points, respectively). These contradicting findings might reflect differences in the timeframe under examination.

6. Discussion and conclusion

Since the establishment of post-study migration and employment pathways in 1999, the labour market integration of international graduates has been an object of debate in Australia (Birrell and Healy 2008; Birrell, Healy, and Kinnaird 2009; Hawthorne 2005, 2010; Robertson 2011, 2014; ABC 2015; Faggian, Corcoran, and Rowe 2016). The understanding of their labour market experiences, however, is largely descriptive and fragmented. The present study set out to provide a more encompassing picture of the labour market position of international graduates who remained in Australia between 1998 and 2015. To assess their labour market experiences, this study considered major changes in the broader socio-political and economic environments as well as the size and composition of the international graduate population in Australia during this period.

Consistent with expectations, the analysis pointed to poor labour market outcomes for international graduates who remained in Australia over the 18-year period. Specifically, international graduates fared worse than domestic graduates on all labour market indicators considered in the analysis. Importantly, the results revealed a clear trend of rising economic inactivity, unemployment, part-time employment and qualification mismatch amongst international graduates after the initiation of post-study migration and employment pathways. The results further indicated that the deterioration occurred at a faster pace for international graduates than domestic graduates, widening the gaps in their labour market outcomes.

The worsening labour market outcomes of international graduates - and that for domestic graduates - came as no surprise. In the last two decades, the labour market for newly qualified tertiary graduates was jeopardised by a series of major economic events, including ongoing skill polarisation, the Global Financial Crisis and the end of the resource boom in the early 2010s (Anlezark 2011; Borland 2011; FYA 2013; The Smith Family 2014). Job opportunities appropriate for young tertiary graduates were growing scarce, and career pathways less clearly defined (Anlezark 2011; Borland 2011; FYA 2013; The Smith Family 2014). Yet, there was continued push for improved higher education access and participation amongst young Australians, while less restrictive immigration framework contributed to influxes of international graduates, temporarily at least.

Nevertheless, international graduates appeared particularly vulnerable to the weakening labour market. This unfavourable position may reflect the additional challenges faced by

international graduates as a result of evolving policies on international graduate retention. In addition to continuous fine-tuning of the policy requirements, the shift to temporary retention puts international graduates at a disadvantage in the Australian labour market, which traditionally favours the employment of permanent migrants. In particular, employers are mainly concerned about their uncertain period of stay in Australia (Blackmore et al. 2014, 2017). On the other hand, international graduates hoping to achieve a level playing field are caught in the process of constant adaptation to the changing requirements of their permanent residency applications at the expense of their career progression (Blackmore et al. 2014, 2017; Robertson and Runganaikaloo 2014). Further, the growing percentage of non-native English-speakers and graduates who did not work in the final year of study points to a general decline in the readiness and capacity of international graduates to negotiate their way into the Australian labour market during this challenging period.

Taken together, the findings point to a need to review and strengthen existing policies and interventions to help international graduates transition to the Australian labour market - if Australia is to fully utilise and benefit from their skills and knowledge. The evidence collected thus far suggests that the existing immigration framework based on temporary retention might have been limited in helping international graduates accumulate local discipline-related work experience and integrate into the Australian labour market. Importantly, future policies and interventions should consider alternative approaches to prepare international graduates - and local graduates - for the labour market; improving paid work experience in the final year of study is likely to be a step in the right direction. More research is required to elucidate the precise mechanisms shaping the labour market performance of international graduates during this volatile period.

Future studies should continue to examine the labour market experiences of international graduates in Australia. Importantly, the present study offers an essential baseline trend to assess the impact of the recent Coronavirus Disease 2019 outbreak on their labour market outcomes. While this study focuses on Australia, the findings are relevant to other countries with similar socio-political and economic shifts. Many countries have also gradually turned to the temporary retention of international graduates, while competition for high-skilled jobs intensifies due to higher education expansion, skill polarisation and slower economic development (Suter and Jandl 2008; OECD 2014). It would be interesting to examine whether international graduates in other nations had

been disproportionately disadvantaged by these changes, as documented for international graduates in Australia.

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