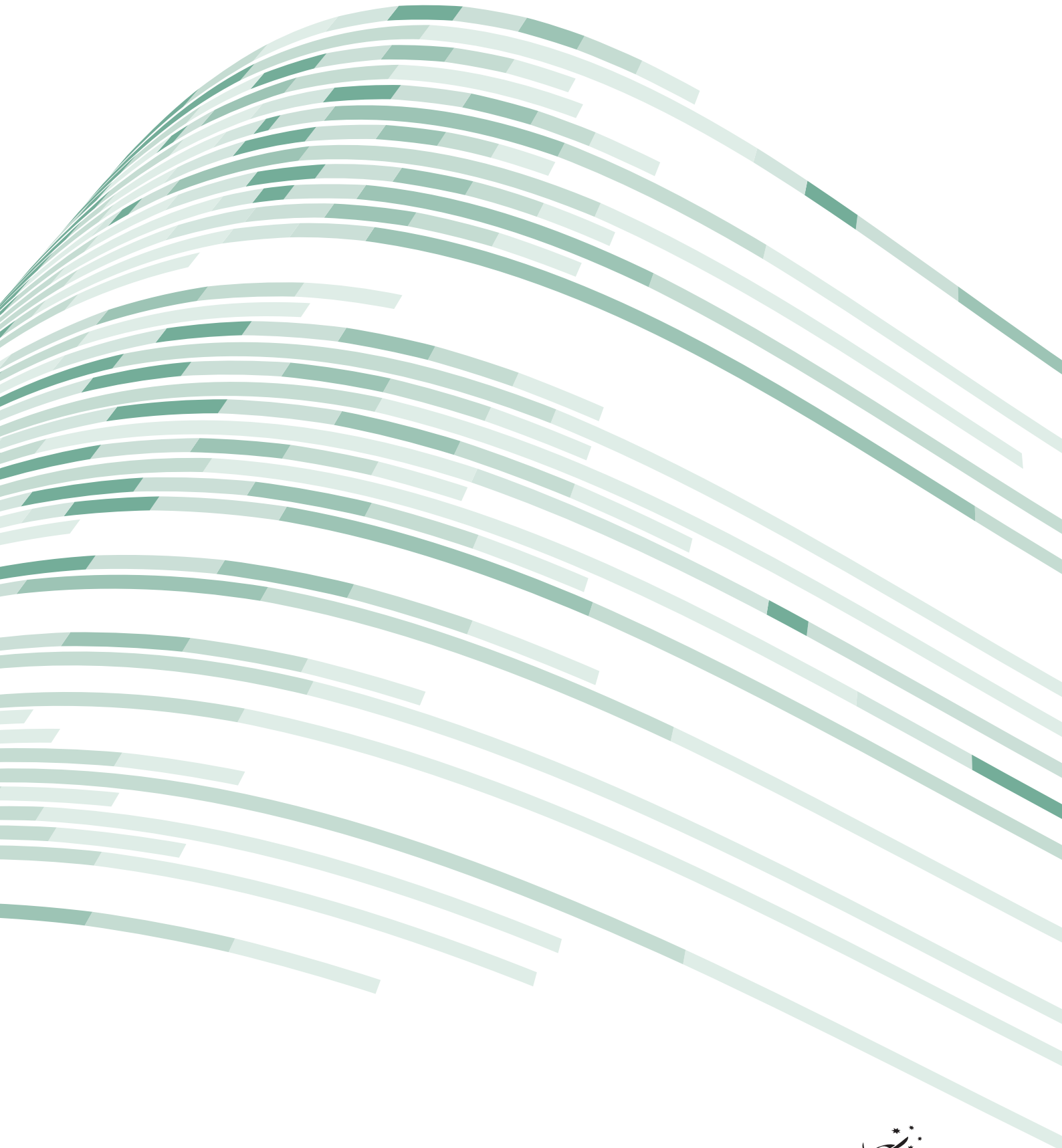


GRADUATE SALARIES 2011

A report on the earnings of new Australian graduates in their first full-time employment



Graduate Salaries 2011

A REPORT ON THE EARNINGS OF NEW AUSTRALIAN
GRADUATES IN THEIR FIRST FULL-TIME EMPLOYMENT



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INTRODUCTION

“A longer-term investigation of graduate salary growth is presented in *Beyond Graduation 2011*, a detailed investigation conducted by GCA into the activities and outcomes of graduates from Australian higher education institutions approximately three years after the completion of their studies”

Welcome to *Graduate Salaries 2011*, the 26th edition of the annual report of the salaries of recent Australian higher education graduates. This report presents baseline information regarding the median starting salaries of bachelor degree graduates aged less than 25 and in their first full-time employment in Australia, along with comparative salary figures from other cohorts.

The condensed format of the report, introduced in 2011, retains only the most popular and relevant tables and figures from previous versions of the report. The full range of tables and figures from previous editions of the Graduate Salaries reports are available for download in Microsoft Excel format from the Graduate Careers Australia website at www.graduatecareers.com.au/Research/ResearchReports/GraduateSalaries.

A number of tables and figures are discussed but not presented in this report. These supplementary tables and figures have been labelled accordingly within this report, and contain hyperlinks to the corresponding web page containing this extra information.

When interpreting the figures contained within this report it is important to keep in mind that graduate salaries may potentially be influenced by domestic labour market forces as well as national and global economic trends, and are therefore not necessarily reflective of the quality of graduates in terms of their academic results or employability skills.

It should also be noted that first-year starting salaries are not necessarily indicative of graduates' earning potential in later years of their careers, as longer-term salary growth in different sectors of employment may be influenced by labour market and other economic factors, career choices or opportunities, geographical factors and, for graduates in certain fields, professional accreditation or registration requirements. A longer-term investigation of graduate salary growth is presented in *Beyond Graduation 2011*, a detailed investigation conducted by GCA, into the activities and outcomes of graduates from Australian higher education institutions approximately three years after the completion of their studies (GCA 2012a).

This report does not attempt to provide a cost-benefit analysis of obtaining a higher education qualification¹. A purely financial assessment of undertaking higher education would need to account for a wide range of costs, such as course fees, textbooks, living expenses, transport and childcare, as well as the opportunity costs resulting from the income forgone whilst studying. Moreover, such an analysis would fail to account for the personal growth and fulfilment stemming from a higher education that may be, to some individuals, a more powerful motivator to study than any potential for financial benefit or labour market advantage.

Throughout this report, we refer often to “Explanatory Notes”. These notes both act as a guide to some of the discussion contained within this report and as a

¹ Recent studies have estimated that the average private rate of return of a university education in Australia is anywhere from 9.4 per cent (Chapman & Salvage 1997) to 14.5 per cent (Borland 2002), although this can vary considerably based on both the level and field of education of the qualification obtained

glossary to some of the terms and concepts, including the use of Male Average Weekly Earning (MAWE), interpretation of the statistical significance tests, fields of education and the methodology of the Australian Graduate Survey (AGS). The “Explanatory Notes” can be found at: www.graduatecareers.com.au/Research/ResearchReports/GraduateSalaries.

References to Australian Bureau of Statistics (ABS) publications are included throughout this report to provide comparative population benchmarks of salary growth; they should not be interpreted as prescriptive explanations of graduate salary levels. As in previous editions of this report, MAWE is used as the primary long-term benchmark of salary levels in the wider Australian population. (Average weekly earnings figures for females have only been collected by the ABS since 1981.) When appropriate, annualised average weekly earnings figures for males, females and all persons are included separately to permit more detailed comparisons between graduate salaries and earnings in the wider Australian population.

While the AGS is conducted as a census, whereby every graduate from an Australian higher education institution is approached for the purposes of data collection, the extent of non-response to the survey² means that it is reasonable, and indeed prudent, to use statistical methods to analyse the resulting sample of responses. Statistical significance tests are included in tables which examine whether key

salary indicators, such as median salaries, working hours and hourly pay rates differ significantly between groups of interest.

² Overall, 38.1 per cent of the Australian resident graduates surveyed did not respond to the Graduate Destination Survey (GDS) component of the 2011 AGS (GCA 2012b).

1.0

GRADUATE STARTING SALARIES

“In 2011, the median starting salary for bachelor degree graduates ... was \$50,000 ...”

In 2011, the median starting salary for bachelor degree graduates aged less than 25 and in their first full-time employment was \$50,000, up from \$49,000 in 2010.

The median starting salary for male and female graduates was \$52,000 and \$50,000 respectively (both increased by \$2,000 from their 2010 figures - *see Table 1*).

Dentistry remained the highest-paid field of education at \$80,000, followed by:

- optometry (\$70,000)
- earth sciences (\$65,000)
- engineering (\$60,000)
- medicine (\$58,500).

The largest growth in median starting salary between 2010 and 2011 was observed in the fields of:

- earth sciences (\$11,000)
- dentistry (\$5,000)
- engineering (\$4,000).

When examining differences in median graduate starting salary (GSS) by sex, statistically significant differences¹ were observed in nine of the 23 fields of education under examination, all of which showed a male pay advantage (although in the case of education graduates this pay advantage was negligible).

Earth sciences graduates exhibited the largest (statistically significant) difference between males and females, with male earth science graduates earning a median starting salary \$10,000 greater than their female counterparts. This was followed by:

- architecture and building graduates (\$7,000 difference between males and females), and
- economics and business graduates (\$5,000).

When examining differences in median GSS by sector of employment, statistically significant differences were observed in 14 of the 23 fields of education under examination. Within these fields there was evidence of some very wide salary ranges, with 12 of these fields exhibiting median salary ranges of at least \$10,000 between the lowest and highest ranked sector of employment.

The widest median salary range was observed for art and design graduates (\$17,500), with graduates employed in the professional practices earning the lowest art and design median starting salary (\$36,500) and graduates employed in the schools sector earning the highest (\$54,000).

Architecture and building, earth sciences, social sciences, pharmacy and education graduates all exhibited salary ranges of \$15,000 or more between their lowest and highest starting salaries.

Considerable differences were also observed when examining median GSS for graduates in particular sectors of employment within different fields of education (although this is hardly surprising considering that, in many cases, different fields of education lead to substantially different occupational pathways).

In the Australian government sector, engineering graduates earned the highest median starting salary at \$58,000. Physical sciences graduates earned the lowest median starting salary in this sector (\$44,000), although this figure is based on a relatively small number of responses (n = 15) and should therefore be interpreted with a degree of caution.

¹ A statistically significant result is unlikely to have occurred by chance. As such, a statistically significant difference observed in the AGS sample can be reliably inferred to exist in the overall graduate population. For more information, please see explanatory notes at www.graduatecareers.com.au/Research/ResearchReports/GraduateSalaries

Table 1: Median starting salaries of bachelor degree graduates in first full-time employment and aged less than 25, by field of education and sector of employment, 2011 (\$,000, n)[†]

	Sector of employment											Sex		
	Australian Government	State Government	Public Health	† Total Government	Professional Practice	Industry/ Commerce	Schools	Tertiary Education	Total Education	Significance	§ TOTAL	Males	Females	Significance
Accounting	53.0	52.0	†	53.0	46.0	46.3	†	†	46.0	**	47.0	48.0	46.0	*
	37	17	†	71	528	388	†	†	15		1,018	469	549	
Agricultural Science	†	†	†	50.0	†	45.0	†	†	†		45.6	45.0	46.0	
	†	†	†	13	†	87	†	†	†		116	49	67	
Architecture & Building	†	†	†	55.0	39.8	47.0	†	†	†	**	46.0	50.0	43.0	**
	†	†	†	55	112	217	†	†	†		389	235	154	
Art & Design	†	†	†	†	36.5	38.0	54.0	†	54.0	**	40.0	42.0	40.0	*
	†	†	†	†	10	172	40	†	45		257	72	185	
Biological Sciences	55.0	47.3	50.9	50.9	42.0	44.0	52.0	51.3	52.0	**	47.0	47.8	47.0	
	11	12	41	76	43	279	49	39	88		521	194	327	
Computer Science	55.0	†	†	54.7	53.0	50.0	49.0	52.0	50.4		51.0	51.5	50.0	
	29	†	†	39	29	279	14	10	24		386	320	66	
Dentistry	†	†	73.0	74.0	83.2	†	†	†	†		80.0	80.0	75.0	
	†	†	38	39	43	†	†	†	†		89	27	62	
Earth Sciences	†	†	†	59.0	54.0	70.0	†	†	†	*	65.0	70.0	60.0	*
	†	†	†	13	10	118	†	†	†		144	90	54	
Economics, Business	53.0	51.0	48.0	51.7	50.0	45.0	41.5	50.0	48.0	**	47.0	50.0	45.0	**
	85	32	10	176	306	1,634	24	39	63		2,315	1,032	1,283	
Education	†	†	†	53.0	†	40.0	55.0	†	55.0	**	55.0	55.0	55.0	**
	†	†	†	17	†	59	1,141	†	1,147		1,271	229	1,042	
Engineering	58.0	56.0	†	57.0	60.0	61.0	†	†	†	**	60.0	60.0	60.0	
	48	21	†	91	380	696	†	†	†		1,207	996	211	
Humanities	50.4	49.0	50.7	50.0	51.0	40.0	53.0	49.0	52.0	**	44.0	44.0	43.0	
	79	41	10	181	95	613	89	25	114		1,117	290	827	
Law	53.0	†	†	53.0	50.0	51.0	†	†	†		51.0	52.0	50.0	*
	32	†	†	62	210	94	†	†	†		376	131	245	
Mathematics	†	†	†	52.6	†	52.0	55.0	†	55.0		55.0	55.0	55.0	
	†	†	†	14	†	46	23	†	25		94	49	45	
Medicine	†	†	60.0	60.0	†	46.5	†	†	†	**	58.5	60.0	58.0	**
	†	†	332	335	†	20	†	†	†		366	150	216	
Optometry	†	†	†	†	70.0	†	†	†	†		70.0	72.0	70.0	
	†	†	†	†	34	†	†	†	†		42	13	29	
Paramedical Studies	†	53.5	50.0	50.0	52.2	49.0	51.6	†	51.6	**	50.0	52.0	50.0	**
	†	11	1,310	1,334	226	357	26	†	32		2,107	335	1,772	
Pharmacy	†	†	50.0	50.0	†	35.0	†	†	†	**	37.0	37.0	37.4	
	†	†	80	81	†	231	†	†	†		315	110	205	
Physical Sciences	44.0	†	†	45.0	†	50.0	50.0	†	50.0		50.0	50.0	53.0	
	15	†	†	19	†	50	10	†	14		92	58	34	
Psychology	53.5	45.0	55.0	53.0	41.0	45.0	54.0	51.0	53.4	**	47.4	50.0	47.0	
	11	11	15	56	28	135	16	13	29		300	48	252	
Social Sciences	†	†	†	49.5	†	39.8	55.0	†	55.0		43.0	42.0	44.0	
	†	†	†	34	†	51	10	†	12		125	26	99	
Social Work	†	†	52.0	52.0	†	45.0	†	†	†	**	50.0	49.0	50.0	
	†	†	29	44	†	23	†	†	†		141	14	127	
Veterinary Science	†	†	†	†	45.0	†	†	†	†		45.0	43.0	45.0	
	†	†	†	†	77	†	†	†	†		83	18	65	
TOTAL	53.0	51.0	52.0	52.0	50.0	46.0	55.0	50.8	55.0		50.0	52.0	50.0	
	390	193	1,883	2,762	2,164	5,562	1,463	168	1,631		12,871	4,955	7,916	
Males	53.0	53.5	56.0	54.6	52.0	50.0	55.0	52.0	55.0		52.0			
	208	72	393	783	1,013	2,617	308	54	362		4,955			
Females	53.0	50.1	51.0	51.0	50.0	44.0	55.0	50.0	55.0		50.0			
	182	121	1,490	1,797	1,151	2,945	1,155	114	1,269		7,916			

† See Graduate Salaries 2011 Explanatory Notes.

† Blank cells contain no, or fewer than 10, respondents.

† 'Total Government' includes local government, which is not listed separately.

§ TOTAL includes the category 'other employers not elsewhere indicated' (including non-profit employers), which is not listed separately.

* = difference statistically significant at 5 per cent level; ** = difference statistically significant at 1 per cent level

Engineering graduates earned the highest median starting salary in the state government sector (\$56,000). Psychology graduates earned the lowest median starting salary (\$45,000), although this was again based on a small number of responses (n = 11).

Dentistry graduates had, by a sizeable margin, the highest median starting salary in the public health sector (\$73,000). Economics and Business graduates earned the lowest median starting salary (\$48,000), although this was also again based on a small number of responses (n = 10).

Dentistry graduates also earned the highest median starting salary in the professional practice sector (\$83,200). This was the highest median starting salary for any field of education within any sector of employment. Art and design graduates earned the lowest median starting salary in this sector (\$36,500 – again with a low sample size of 10).

In the industry and commerce sector, earth sciences graduates earned the highest

median starting salary at \$70,000. Pharmacy graduates earned the lowest median starting salary (\$35,000), which was also the lowest median starting salary for any field of education within any sector of employment.

Education, mathematics and social science graduates had the highest median starting salaries in the schools sector (\$55,000, although the figure for social sciences was based on a small number of graduates, n = 10). Economics and business graduates earned the lowest median starting salary (\$41,500).

Computer science graduates earned the highest median starting salary in the tertiary education sector (\$52,000), although this was again based on a small number of responses (n = 10). Humanities graduates earned the lowest median starting salary (\$49,000) in this sector.

Overall, graduates employed in the schools sector again earned the highest median starting salary (\$55,000) in 2011, followed by the Australian government sector (\$53,000) and the public health sector

(\$52,000). These sectors were also largely the highest paying in 2010, 2009 and 2008 (GCA, 2009-11). As was also the case in recent years, graduates employed in the industry and commerce sector earned the lowest median starting salary (\$46,000).

2.0

GRADUATE STARTING
SALARIES AND AVERAGE
WEEKLY EARNINGS

Table 2: Annual rate of male average weekly earnings (MAWE) and median starting salaries for all bachelor degree graduates aged less than 25 and in first full-time employment (GSS), 1977-2011 (\$,000)^{cs†}

	Annual rate of MAWE	Median GSS (All)	GSS (All) as % of MAWE
1977	9.6	9.6	100.0
1979	11.3	10.9	96.5
1980	12.5	11.8	94.4
1981	14.1	13.2	93.6
1982	16.5	14.9	90.3
1983	17.8	15.9	89.3
1984	19.6	17.2	87.8
1985	20.5	18.2	88.8
1986	22.1	19.8	89.6
1987	23.3	20.9	89.7
1988	24.9	23.0	92.4
1989	26.8	24.0	89.6
1990	28.7	24.9	86.8
1991	30.0	25.3	84.3
1992	31.1	25.7	82.6
1993	31.8	25.5	80.2
1994	32.5	26.0	80.0
1995	33.9	27.0	79.6
1996	34.8	28.0	80.5
1997	35.7	29.0	81.2
1998	37.2	30.0	80.6
1999	38.0	31.0	81.6
2000	39.2	33.0	84.2
2001	40.8	35.0	85.8
2002	42.9	35.5	82.7
2003	45.1	37.0	82.0
2004	46.6	38.0	81.6
2005	48.9	40.0	81.8
2006	51.2	40.8	79.7
2007	53.7	43.0	80.1
2008	55.6	45.0	80.9
2009	57.8	48.0	83.0
2010	61.4	49.0	79.8
2011	64.0	50.0	78.1

^c See *Graduate Salaries 2011 Explanatory Notes*.

[†] Data from 1978 are incompatible with those from other years and have been excluded from the series.

The annual rate of Male Average Weekly Earnings (MAWE) is used throughout this report as a population benchmark against which to compare movements in median graduate starting salaries (GSS)¹.

At the time of the 2011 Graduate Destination Survey (GDS), Australian resident bachelor degree graduates who were aged less than 25 and in their first full-time employment in Australia earned a median starting salary of \$50,000. This was 78.1 per cent of MAWE in 2011 (\$64,000 - ABS 2011b).

Since this series began in 1977, median GSS has fluctuated considerably relative to MAWE (*see Table 2*)².

From the mid 1970s through to the mid 1990s, the median GSS declined steadily relative to MAWE. From the mid 1990s through to 2001, median GSS (relative to MAWE) experienced growth, peaking at 85.8 per cent in 2001 before declining to 79.7 per cent in 2006. From 2007, median GSS began to grow steadily again relative to MAWE; a trend which persisted through to the 2009 figure of 83.0 per cent. In 2010, this figure again declined to 79.8 per cent; declining further to 78.1 per cent in 2011.

The 2011 median GSS of \$50,000 represented a 2.0 per cent (\$1,000) increase relative to the 2010 median GSS of \$49,000. Over the same period, MAWE grew by 4.2 per cent (\$2,600), more than the increase in median GSS in both nominal and percentage terms.

When these figures are examined over time, the average annual increase in MAWE since 1977 has been 6.0 per cent, compared with an average annual increase in median

“Australian resident bachelor degree graduates ... earned a median starting salary ... 78.1 per cent of MAWE.”

¹ See *Explanatory Notes* for a detailed discussion of the calculation and interpretation of MAWE figures.

² In 1977, GSS was identical to MAWE (\$9,600).

GSS of 5.2 per cent. This shows that, over the long term, the growth in median GSS has been lower than the growth in MAWE. This being said, it is important to note that average weekly earnings (for males and females) may have been positively affected over time as the proportion of higher education graduates in the workforce increases. As the salaries of higher education graduates grow over time, average weekly earnings for all will increase accordingly.

GSS and AWE by sex

Expressing the median starting salary for both males and females as a percentage of MAWE indicates that both groups showed only a minor change between 2011 and 2010. The 2011 figure for females of 78.1 per cent represents a 0.1 percentage point decrease from 2010 (78.2 per cent), while the 2011

median starting salary for males, expressed as a percentage of MAWE (81.3 per cent) changed marginally from the 2010 figure of 81.4 per cent (*see supplementary Table B in Graduate Salaries 2011 Tables and Figures*).

When we examine the median GSS for females as a percentage of Female Average Weekly Earnings (FAWE), we see that the median female GSS was equal to 120.6 per cent of FAWE, similar to the equivalent figure of 120.7 found in 2010 (*see Figure 1*).

The median male GSS, as shown below, was equal to 81.3 per cent of MAWE, the lowest point in the past 10 years.

An examination of GSS and sex specific AWE over the past decade (*see supplementary Figure C in Graduate Salaries 2011 Tables and Figures*) reveals that while median starting salaries for

male graduates aged less than 25 and in their first full-time employment are considerably lower than average earnings for male employees in the wider Australian population, the situation is reversed for female graduates, with median starting salaries for those aged less than 25 and in their first full-time employment, considerably higher than average earnings for female employees in the wider Australian population.

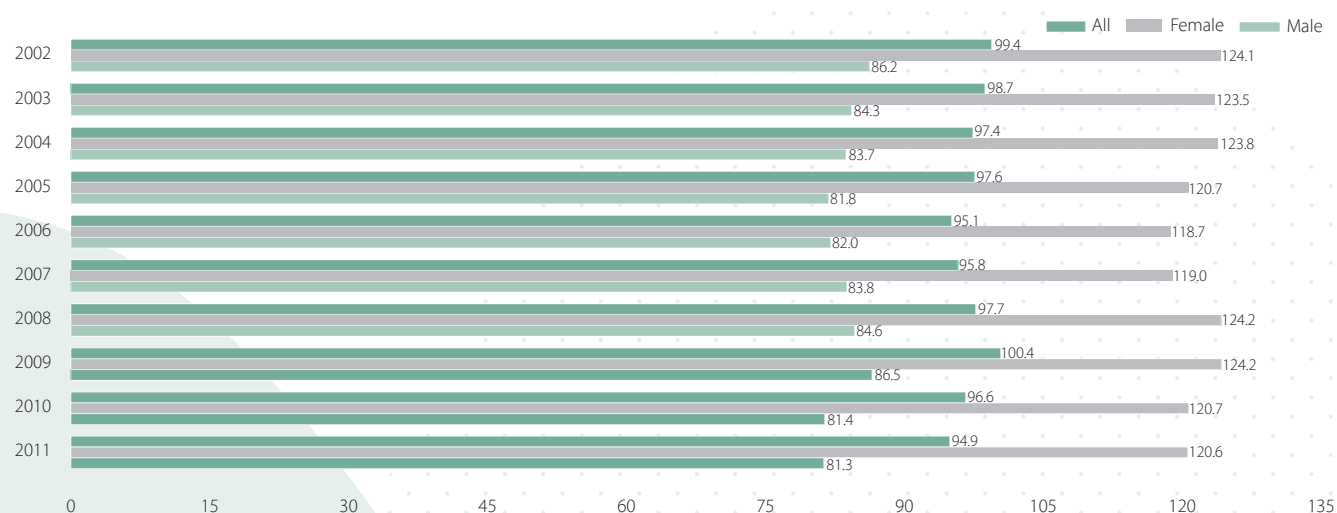


Figure 1: Median starting salary for bachelor degree graduates aged less than 25 and in first full-time employment (GSS) as a percentage of average weekly earnings (AWE) by sex, 2002-11

3.0

IMPACT OF AGE AND
EMPLOYMENT EXPERIENCE
ON GRADUATE STARTING
SALARIES

Older graduates (i.e. aged 25 and over) can be seen to be a different, much less homogenous cohort than those graduates aged less than 25 who went directly from secondary school to higher education with little or no previous full-time employment experience.

They may be returning to study in order to gain qualifications that will allow them to advance within their current employment, or they may be returning to study with the intention of changing to a different job or a different career path altogether. Additionally, graduates aged 25 years and over and in their first full-time employment are likely to have been previously engaged only in part-time or casual employment.

Employment experience and starting salaries

Median salaries for graduates aged 25 and over with previous full-time employment experience are typically higher than those for graduates aged less than 25 and in their first full-time employment (*see Table 3*). However, a direct comparison of salary levels between older graduates with previous full-time employment experience and younger graduates in their first full-time employment is confounded by the fact that it is unclear whether age or previous full-time employment experience is responsible for higher salary levels.

When comparing the salary levels of graduates aged 25 and over with previous

“Older graduates (i.e. aged 25 and over) can be seen to be a different, much less homogenous cohort ...”

Table 3: Summary of median salaries for bachelor degree graduates aged less than 25, and 25 and over, in first full-time employment and with previous full-time employment experience, 2002-11 (\$,000)^a

	Aged 25 and over with previous full-time employment			Aged 25 and over in first full-time employment			Aged less than 25 and in first full-time employment		
	Male	Female	All	Male	Female	All	Male	Female	All
2002	42.4	38.0	40.0	40.0	38.0	39.0	37.0	35.0	35.5
2003	42.0	40.0	40.0	42.0	38.6	40.0	38.0	36.3	37.0
2004	45.0	40.0	41.5	43.0	40.0	41.0	39.0	38.0	38.0
2005	45.5	42.0	43.0	43.0	40.1	42.0	40.0	39.0	40.0
2006	47.6	43.0	45.0	45.0	43.0	43.5	42.0	40.0	40.8
2007	50.0	45.0	46.4	46.0	43.0	45.0	45.0	42.0	43.0
2008	51.0	47.5	50.0	50.0	46.0	48.0	47.0	45.0	45.0
2009	55.0	50.0	52.0	52.0	48.8	50.0	50.0	47.0	48.0
2010	58.0	52.0	54.0	53.0	50.0	52.0	50.0	48.0	49.0
2011	60.0	54.0	56.0	55.0	52.0	53.0	52.0	50.0	50.0

^a See Graduate Salaries 2011 Explanatory Notes.

full-time employment experience against those graduates aged 25 and over *without* previous full-time employment experience, it is clear that while graduates with previous full-time employment experience can earn higher median starting salaries than their counterparts in their first full-time employment, the differences tend to be minor.

As shown in Table 3:

- the median salary of those graduates aged 25 and over with previous full-time employment experience was \$3,000 (or 5.6 per cent) higher than the comparative group of graduates in their first full-time employment in 2011
- the pay advantage was more pronounced for males, with previous full-time employment experience earning male graduates aged 25 and over a \$5,000 premium in their median salary
- previous full-time employment experience earned female graduates aged 25 and over a \$2,000 premium in their median salary.

The majority of bachelor degree graduates aged 25 and over who are in full-time employment at the time of the GDS have some previous full-time employment experience behind them at the time of their survey (*see supplementary Table D in Graduate Salaries 2011 Tables and Figures*).

In 2011:

- 72.8 per cent of full-time employed graduates aged 25 and over were not in their first full-time employment.
- female graduates aged 25 and over were more likely than their male counterparts to have previous full-time employment experience (73.8 per cent and 71.4 per cent respectively; a difference of 2.4 percentage points) (*see supplementary Table E in Graduate Salaries 2011 Tables and Figures*).

When examining the median salaries of graduates aged 25 and over by field of education, statistically significant

differences based on their level of previous full-time employment experience were observed in 14 of the 23 fields under examination, 12 of which revealed a pay advantage for graduates who had some previous full-time employment experience (*see supplementary Table D in Graduate Salaries 2011 Tables and Figures*).

The largest difference based on previous full-time employment experience was observed for economics and business graduates, and accounting graduates, where those with previous full-time employment experience earned a median starting salary \$10,000 higher than those without previous experience, followed by:

- computer science (\$9,000)
- engineering (\$8,000)
- pharmacy (\$7,500).

As in previous years, a notable pay advantage, which paradoxically favoured graduates in their first full-time employment, was observed for dentistry graduates (\$14,000) (*see supplementary Table D in Graduate Salaries 2011 Tables and Figures*).

While these salary figures alone are not sufficient to confirm a definite salary advantage for graduates with full-time employment experience, they do suggest that previous full-time employment experience is associated with higher median salaries for graduates from certain fields of education. It should also be noted that graduate salaries are likely to be influenced by a range of factors additional to previous employment experience (including, for example, the graduate's skills and abilities, the level of responsibility inherent in the role and fixed pay grades for particular roles within certain organisations) and that previous full-time experience in a field not directly relevant to their current employment may not provide graduates with a pay advantage relative to those graduates with no full-time employment experience.

When examining the median salaries of graduates aged 25 and over and with

previous full-time employment experience by field of education (*see supplementary Table E in Graduate Salaries 2011 Tables and Figures*), statistically significant sex differences were observed in 14 of the 23 fields under examination. With the exception of psychology graduates, all of these significant differences revealed a male pay advantage (although in the case of medicine graduates this was negligible).

Age and starting salaries

By comparing the median starting salaries of bachelor degree graduates aged less than 25 and in their first full-time employment, with those bachelor degree graduates aged 25 and over and also in their first full-time employment, any potential labour market advantage gained from prior full-time employment experience is largely negated. This permits any differences in median GSS to be investigated in relation to the age group of the graduate. It should be noted that the cohort of graduates aged 25 and over and with no previous full-time employment experience is relatively small ($n = 2,827$), which limits the number of field of education comparisons that can be made.

On average, it appears that older graduates do tend to earn higher median starting salaries than their younger counterparts, with graduates aged 25 and over and in their first full-time employment earning a median starting salary \$3,000 higher than their younger counterparts (*see supplementary Table E in Graduate Salaries 2011 Tables and Figures*).

This suggests that having previous full-time employment experience and being older can have a positive impact on median starting salaries for graduates from a number of fields of education. Graduates aged less than 25 who commenced their higher education immediately after completing secondary school may not have had the life experience, both professionally and personally, that older graduates possess. Moreover, graduates who returned to study at an older

age may be more outcomes-focused than their younger counterparts. Factors such as these are not easily quantifiable; however they may contribute to some older graduates securing higher median starting salaries.

Similar findings were observed in a longitudinal study of higher education graduates in the United Kingdom (Purcell, Wilton & Elias 2003), with graduates aged less than 25 typically earning less in their first full-time job after graduation than their older counterparts. When these same graduates were re-surveyed seven years later the situation was reversed: the cohort of 'younger' graduates were earning more than their older counterparts. This suggests that, while older graduates tend to earn a higher median starting salary, it does not necessarily guarantee that they will maintain this salary advantage throughout their careers. Later earnings would likely be affected by their job performance, professional development, long-term career choices and a range of other factors outside the scope of the GDS.

4.0

SALARIES BY LOCATION

“... median starting salaries ... varied by up to \$6,000 based on the Australian State or Territory in which their employment was based ...”

In 2011, median starting salaries for bachelor degree graduates aged less than 25 and in their first full-time employment varied by up to \$6,000 based on the Australian State or Territory in which their employment was based (*see Table 4*).

Graduates employed in the Northern Territory earned the highest median starting salary of the Australian States and Territories in 2011 (\$55,000). This was followed by Western Australia (\$52,000) and the Australian Capital Territory (\$51,100).

Graduates employed in Victoria earned the lowest median starting salary (\$49,000).

Differences in median GSS between States and Territories may be attributable to a range of factors, including economic forces, such as the resources boom and the lingering effects of the global economic downturn, as well as the availability of courses in particular geographic locations. For instance, the typically higher-paying fields

of medicine and dentistry are not offered by higher education institutions in every State and Territory. This is exacerbated by the fact that a large proportion of the graduates who secured full-time employment by the time of the 2011 AGS did so in the State or Territory in which they undertook their higher education (*see supplementary Table F in Graduate Salaries 2011 Tables and Figures*).

For bachelor degree graduates aged less than 25 and in their first full-time employment, the percentage in full-time employment in their State or Territory of study in 2011 was lowest for Queensland (68.7 per cent) and Tasmania (69.7 per cent). The percentage of these graduates in full-time employment in their State or Territory of study was highest for Western Australia (86.2 per cent) and Victoria (85.8 per cent).

Statistically significant sex differences in median GSS were observed in five States and

Table 4: Median starting salaries for bachelor degree graduates aged less than 25 and in first full-time employment by State or Territory of employment, and comparison of all graduates to male average weekly earnings (MAWE) for that State or Territory, 2011 (\$,000)^a

	Males	Females	All	Sig. [sex]	MAWE (State)	GSS as % of MAWE
NSW	54.0	50.0	50.0	**	63.1	79.3
Vic.	50.0	48.0	49.0	**	61.0	80.4
Qld	51.0	50.0	50.0	**	64.3	77.8
SA	52.0	50.0	50.0	**	57.5	86.9
WA	56.0	50.0	52.0	**	76.8	67.7
Tas.	51.0	50.0	50.0		53.1	94.2
NT	58.0	55.0	55.0		67.3	81.7
ACT	51.0	51.6	51.1		73.6	69.5
TOTAL	52.0	50.0	50.0		64.0	78.2

^a See *Graduate Salaries 2011 Explanatory Notes*.

* = difference statistically significant at 5 per cent level;

** = difference statistically significant at 1 per cent level

Territories (the exceptions were Tasmania, Northern Territory and Australian Capital Territory). All of these significant differences revealed a male pay advantage (*see Table 4*).

The largest significant sex difference was observed for graduates employed in Western Australia, where males earned a median starting salary \$6,000 greater than females.

The salary discrepancy was least between males and females in Queensland (only \$1,000 separated the two).

Differences in median GSS between States and Territories do not necessarily reflect differences in average earnings within the wider population for each State and Territory. A clearer picture of GSS in the economic and demographic context of each State and Territory can be obtained by examining median GSS as a percentage of AWE within each State and Territory (*see Table 5*).

Table 5 compares median GSS to the annual rate of average weekly earnings (AWE) for males and females individually. These figures should be interpreted with a degree of caution because the composition of the labour force may make some median GSS figures seem overly positive in comparison (*see Graduate Salaries 2011 Explanatory notes*).

In 2011, male graduates earned median starting salaries between 69.3 per cent of MAWE (in the Australian Capital Territory) and 96.1 per cent of MAWE (in Tasmania).

Median starting salaries for female graduates, on the other hand, exceeded FAWE in every State and Territory with the exception of the Australian Capital Territory. Female graduates in Tasmania earned the highest median starting salary relative to FAWE (136.2 per cent) followed by South Australia (135.5 per cent) while female graduates in the Australian Capital Territory

earned the lowest starting salary relative to FAWE (91.0 per cent), as has also been the case in recent years.

When starting salaries for all bachelor degree graduates aged less than 25 and in their first full-time employment are compared to AWE for all persons in their State or Territory of employment, relative graduate earnings range from 78.5 per cent of AWE in the Australian Capital Territory to 110.9 per cent of AWE in Tasmania.

Median starting salaries of graduates employed in regional areas in 2011 were again higher than those for their counterparts employed in capital cities (\$52,000 compared with \$50,000 - *see supplementary Table G in Graduate Salaries 2011 Tables and Figures*).

Female graduates employed in regional areas earned a median starting salary \$1,700 more than female graduates employed in capital cities, while male graduates employed in

Table 5: Median starting salaries for male, female and all bachelor degree graduates aged less than 25 and in first full-time employment by employment State or Territory, and comparison with AWE for that State or Territory, 2011 (\$,000)^a

	Male			Female			All		
	GSS Median Salary	MAWE (State)	GSS as % of MAWE	GSS Median Salary	FAWE (State)	GSS as % of FAWE	GSS Median Salary	AWE (State)	GSS as % of AWE
NSW	54.0	63.1	85.6	50.0	43.3	115.5	50.0	53.3	93.7
Vic.	50.0	61.0	82.0	48.0	40.1	119.6	49.0	50.3	97.4
Qld	51.0	64.3	79.3	50.0	41.2	121.2	50.0	52.8	94.6
SA	52.0	57.5	90.4	50.0	36.9	135.5	50.0	46.9	106.6
WA	56.0	76.8	72.9	50.0	40.1	124.6	52.0	58.6	88.8
Tas.	51.0	53.1	96.1	50.0	36.7	136.2	50.0	45.1	110.9
NT	58.0	67.3	86.1	55.0	48.5	113.4	55.0	58.0	94.9
ACT	51.0	73.6	69.3	51.6	56.7	91.0	51.1	65.1	78.5

^a See *Graduate Salaries 2011 Explanatory Notes*.

regional areas earned \$2,000 more than their capital city counterparts.

When examined by field of education, statistically significant differences in salary based on whether graduates were employed in capital cities or regional areas were observed in 8 of the 22 fields of education under examination that contained a sufficient number of responses to facilitate comparisons.

When examined over time (*see Table 6*), it can be seen that the greatest difference in median starting salaries between capital cities and regional areas in the past decade was observed in 2006, when median capital city GSS fell to 95.2 per cent of median regional area GSS. The second lowest value in this series has been observed for 2011. The value

of a median capital city GSS only exceeded the value of a median regional area GSS once in this 12-year period (in 2001, with a value of 100.9 per cent).

The situation is different, however, when examined by sex. For the past 12 years, the median starting salary for female graduates employed in regional areas has consistently exceeded the median starting salary for female graduates employed in capital cities, with relative values of a median capital city GSS ranging from 95.2 per cent of a median regional area GSS in 2004 and 2006 to 97.8 per cent in 2008.

Conversely, the median starting salary for male graduates employed in regional areas has only exceeded the median starting salary for male graduates employed in capital cities

for three years out of the last 12 (in 2004, 2005, and again in 2011).

When comparing GSS between capital cities and regional areas, it is important to note that the majority of corporate head offices are located in capital cities (particularly Sydney and Melbourne), as well as the fact that graduates from certain fields may be paid a salary loading to work in more remote areas. This may contribute to the relatively high median starting salaries earned by graduates employed in the Northern Territory and Western Australia and may also help to account for the higher overall median starting salary earned by graduates employed in regional areas.

Table 6: Median starting salaries of bachelor degree graduates in first full-time employment and aged less than 25, by capital city / regional area, 2000-11 (\$,000)^a

	Males				Females				All			
	Capital City	Regional	Total	Capital as % of regional	Capital City	Regional	Total	Capital as % of regional	Capital City	Regional	Total	Capital as % of regional
2000	35.0	34.0	34.5	102.9	32.0	33.1	32.0	96.6	32.5	33.5	33.0	97.0
2001	36.0	35.0	36.0	102.9	33.6	34.5	34.0	97.4	35.0	34.7	35.0	100.9
2002	37.0	37.0	37.0	100.1	35.0	36.0	35.0	97.2	35.4	36.0	35.5	98.2
2003	38.0	38.0	38.0	100.0	36.0	37.0	36.3	97.3	36.5	37.6	37.0	97.2
2004	39.0	39.5	39.0	98.7	37.0	38.9	38.0	95.2	38.0	39.0	38.0	97.4
2005	40.0	40.1	40.0	99.6	38.5	40.0	39.0	96.3	39.5	40.0	40.0	98.8
2006	42.0	42.0	42.0	100.0	40.0	42.0	40.0	95.2	40.0	42.0	40.8	95.2
2007	45.0	45.0	45.0	100.0	42.0	43.0	42.0	97.7	43.0	43.5	43.0	98.9
2008	47.1	47.0	47.0	100.3	45.0	46.0	45.0	97.8	45.0	46.0	45.0	97.8
2009	50.0	50.0	50.0	100.0	46.0	48.0	47.0	95.8	47.5	48.0	48.0	99.0
2010	50.0	50.0	50.0	100.0	48.0	50.0	48.0	96.0	48.8	50.0	49.0	97.7
2011	52.0	54.0	52.0	96.3	49.3	51.0	50.0	96.7	50.0	52.0	50.0	96.2

^a See Graduate Salaries 2011 Explanatory Notes.

5.0

SALARY RANKINGS

Table 7: Fields of education ranked according to median starting salary for bachelor degree graduates aged less than 25 in first full-time employment, 2011^a

2011 Rank (2010 rank)		Median salary in 2011 (\$,000)	No. of graduates in 2011
1 (=)	Dentistry	80.0	89
2 (=)	Optometry	70.0	42
3 (5)	Earth Sciences	65.0	144
4 (3)	Engineering	60.0	1,207
5 (=)	Medicine	58.5	366
6 (=)	Education	55.0	1,271
6 (7)	Mathematics	55.0	94
8 (=)	Computer Science	51.0	386
8 (11)	Law	51.0	376
10 (8)	Paramedical Studies	50.0	2,107
10 (8)	Physical Sciences	50.0	92
10 (13)	Social Work	50.0	141
13 (12)	Psychology	47.4	300
14 (=)	Accounting	47.0	1,018
14 (=)	Biological Sciences	47.0	521
14 (=)	Economics, Business	47.0	2,315
17 (14)	Architecture & Building	46.0	389
18 (14)	Agricultural Science	45.6	116
19 (14)	Veterinary Science	45.0	83
20 (21)	Humanities	44.0	1,117
21 (20)	Social Sciences	43.0	125
22 (=)	Art & Design	40.0	257
23 (=)	Pharmacy	37.0	315

^a See *Graduate Salaries 2011 Explanatory Notes*.

Ranking fields of education by median graduate starting salary (GSS) provides a useful basis for comparing salary data, both in the current year and over the long term. Table 7 ranks fields of education from highest to lowest (1 to 23) according to its median GSS (*see supplementary Table H in Graduate Salaries 2011 Tables and Figures* for similar rankings for the period 1977-2009).

The majority of the fields of education under examination have shown a high level of stability in rankings over the past three decades. The top-ranked fields of dentistry, optometry, engineering and medicine have consistently been ranked highly throughout this period, while the lower-ranked fields of art and design and pharmacy have also maintained consistent rankings over the years (*see supplementary Table H in Graduate Salaries 2011 Tables and Figures*).

The ranking of earth science graduates has increased in recent years from tenth position in 2002 to be third in 2011.

When considering the rankings of the fields of education, the difference in median GSS between the highest-ranked field (dentistry) and the lowest-ranked field (pharmacy) was \$43,000; marginally higher than the difference of \$39,000 between these same two fields in 2010, but considerably higher than the difference in 2000 (\$25,000).

The difference in median GSS in the upper half of the fields was \$30,000, between top-ranked dentistry (\$80,000) and tenth ranked social work (\$50,000 – *see Table 7*).

The difference in median GSS for the remaining lower-ranked fields, however, was \$10,400, between psychology (ranked 11th at \$47,400) and bottom-ranked pharmacy (\$37,000).

It should be noted that median salary rankings, while useful, can also be somewhat misleading. Graduate salary data collected via the GDS can potentially include both overtime and above-award payments. This means that while median salary levels as reported do accurately reflect real graduate earnings at the time of the survey, they do not necessarily reflect award wage levels (where these may be in place).

When fields of education are ranked according to median hourly rate (calculated by dividing reported earnings by reported working hours), some notable differences between the respective rankings by median GSS and hourly rate are evident (*see Table 8*).

- While medicine graduates were ranked fifth in terms of their median GSS, they were ranked eighth in terms of their median hourly rate, working an average of 47 hours per week in 2011 at a median hourly rate of \$25.00 per hour.
 - This again represented the highest average number of hours worked for any field of education in 2011.
- While law graduates were ranked eighth in terms of their median GSS, they were ranked 12th in terms of their median hourly rate. In 2011 they worked an average of 42 hours per week at a median hourly rate of \$24.00.

The average number of hours worked by graduates has remained stable over the past 20 years, with the average working hours per week fluctuating between 40 and 41 since 1991 (GCA 2004-05; GCA 2006-11; GCCA 1989-93; GCCA 1994-2003).

Table 8: Fields of education ranked according to calculated hourly rate for bachelor degree graduates aged less than 25 and in first full-time employment, 2011^a

2011 rank by hourly rate (2010 rank)		Mean hours	Hourly rate (\$)	Median GSS (\$,000)	Rank by median GSS
1(=)	Dentistry	39	39.0	70.0	1
2(=)	Optometry	39	35.0	64.5	2
3(4)	Earth Sciences	45	28.8	54.0	3
4(3)	Engineering	42	28.4	57.5	4
5(6)	Mathematics	40	26.5	52.0	6
6(5)	Education	40	26.3	51.0	6
7(9)	Computer Science	39	25.2	49.6	8
8(12)	Medicine	47	25.0	54.0	5
8(=)	Social Work	38	25.0	45.0	10
10(9)	Paramedical Studies	40	24.8	47.0	10
11(6)	Physical Sciences	42	24.5	48.0	10
12(=)	Law	42	24.0	50.0	8
13(11)	Psychology	39	23.5	45.0	13
14(15)	Accounting	39	23.3	45.0	14
15(14)	Biological Sciences	39	23.1	45.0	14
16(17)	Economics, Business	41	22.6	45.0	14
17(=)	Agricultural Science	41	21.7	45.0	18
18(21)	Architecture & Building	41	21.5	45.0	17
19(16)	Social Sciences	39	21.3	42.0	21
20(19)	Humanities	40	21.2	42.0	20
21(20)	Veterinary Science	43	20.2	45.0	19
22(=)	Art & Design	39	19.2	37.3	22
23(=)	Pharmacy	39	18.2	35.0	23
Male		41	24.6		
Female		40	24.0		
All		40	24.0		

^a See *Graduate Salaries 2011 Explanatory Notes*.

6.0

SALARY GROWTH

By showing the median GSS in 2011 as a percentage of the median GSS in 1977 and MAWE in 2011 as a percentage of MAWE in 1977, the growth in median GSS can be measured over time against a common benchmark¹. (It is important to note that this analysis does not address the impact of consumer price inflation on salary levels and is based solely on nominal growth in median GSS and MAWE over time.)

In 2011, the median GSS was equivalent to 520.8 per cent of the median GSS in 1977, while MAWE in 2011 was equivalent to 666.4 per cent of MAWE in 1977 (see Table 9).

Since 1977, MAWE has grown at a greater rate than the median GSS, with the difference between the two trending higher over time (although the two began converging, albeit slightly, in 2008). In 2011, there was a difference of 145.6 percentage points between the GSS and MAWE growth indices; the highest gap recorded since the beginning of this series.

Examining field of education differences (see *supplementary Table J in Graduate Salaries 2011 Tables and Figures*), we see:

- the median starting salary for law graduates in 2011 was equivalent to 894.7 per cent of the median starting salary for law graduates in 1977, compared with an average of 520.8 per cent across all fields of education
- that the law median GSS continued to exhibit growth that exceeded that of MAWE – as has been the case for the thirty-four year period of this table
- for the first time in 2011, the growth in salary of earth science graduates from 1977 also exceeded the growth of the MAWE.

Other fields of education that exhibited greater than average growth in median GSS over the period 1977-2011 were:

- engineering (594.1 per cent)
- mathematics (578.9 per cent)
- education (550.0 per cent)
- accounting (540.2 per cent)
- physical sciences (531.9 per cent)
- architecture and building (528.7 per cent)
- pharmacy (528.6 per cent)
- dentistry (522.9 per cent).

Overall, medicine graduates have experienced the lowest growth in their median starting salary between 1977 and 2011, with a median GSS in 2011 equivalent to 439.8 per cent of that in 1977.

The fields of paramedical studies, optometry and art and design were disaggregated for reporting purposes for the first time in 1988. GSS growth indices covering the period 1988-2011 for these fields of education are presented in *supplementary Table K in Graduate Salaries 2011 Tables and Figures*.

Examining the median starting salary growth indices covered by the period 1988-2011, we see:

- the median starting salary for optometry graduates in 2011 was equivalent to 266.2 per cent of the median starting salary for optometry graduates in 1988, the largest growth (compared with an average of 217.4 per cent across these fields of education for this same period)
- the growth in median starting salaries for optometry graduates exceeded the growth in MAWE between 1988 and 2011, which was 256.9 per cent.

“In 2011, the median GSS was equivalent to 520.8 per cent of the median GSS in 1977...”

¹ Median GSS and MAWE for 1977 are represented as 100.0 per cent in each respective growth index.

The highest growth in 2011 median GSS relative to 1977 median GSS within industry sectors was for:

- law graduates in the professional and private practice sector (925.9 per cent), followed by
- humanities graduates (718.3 per cent) in the same sector
- earth sciences (714.3 per cent) in the industry commerce sector.

These were the only fields of education in 2011 which exhibited growth in median GSS relative to 1977 at a greater rate than that of MAWE for the same period (666.4 per cent).

Relative to 1977, graduates employed in the professional and private practice sector have experienced the highest level of growth in their median starting salary (609.8 per cent - *supplementary Table J in Graduate Salaries 2011 Tables and Figures*). Conversely, graduates employed in the industry/commerce sector have experienced the least growth (489.4 per cent).

Table 9: Growth in male average weekly earnings (MAWE) relative to 1977 MAWE, growth in median starting salaries for bachelor degree graduates aged less than 25 and in first full-time employment (GSS) relative to 1977 GSS, 1977-2011(%)^{††}

	MAWE as % of 1977 MAWE	GSS as % of 1977 GSS	Difference (percentage points)
1977	100.0	100.0	0.0
1979	117.7	113.5	4.2
1980	130.2	122.9	7.3
1981	146.9	137.5	9.4
1982	171.9	155.2	16.7
1983	185.4	165.6	19.8
1984	204.2	179.2	25.0
1985	213.5	189.6	23.9
1986	230.2	206.3	23.9
1987	242.7	217.7	25.0
1988	259.4	239.6	19.8
1989	279.2	250.0	29.2
1990	299.0	259.4	39.6
1991	312.5	263.5	49.0
1992	324.0	267.7	56.3
1993	331.3	265.6	65.7
1994	338.5	270.8	67.7
1995	353.1	281.3	71.8
1996	362.5	291.7	70.8
1997	372.9	302.1	70.8
1998	387.5	312.5	75.0
1999	395.8	322.9	72.9
2000	408.3	343.8	64.5
2001	425.0	364.6	60.4
2002	446.0	369.8	76.2
2003	469.8	385.4	84.4
2004	485.4	395.8	89.6
2005	509.4	416.7	92.7
2006	533.3	425.0	108.3
2007	559.4	447.9	111.5
2008	579.2	468.8	110.4
2009	601.9	500.0	101.9
2010	639.7	510.4	129.3
2011	666.4	520.8	145.6

^{††} See *Graduate Salaries 2011 Explanatory Notes*.

^{†††} Data from 1978 are incompatible with those from other years and have been excluded from the series.

7.0

SALARIES FOR MALES
AND FEMALES

Table 10 presents median starting salaries for female graduates aged less than 25 and in their first full-time employment as a percentage of the corresponding median starting salary for male graduates. Some caution should be exercised when examining fields of education which typically contain a small number of responses (e.g. veterinary science, dentistry, optometry).

The median starting salary for female graduates aged less than 25 and in their first full-time employment (\$50,000) was equivalent to 96.2 per cent of the median starting salary earned by their male counterparts (\$52,000). This figure is 0.2 percentage points higher than the corresponding figure in 2010 (96.0 per cent and only 3.3 percentage points lower than the series high point of 97.5 per cent in 2005). The current figure is also slightly higher than the long-term average for this series (94.4 per cent).

While median starting salaries for female graduates have experienced notable fluctuations relative to median starting salaries for male graduates over the years, earth sciences has remained the field of education with the highest female median graduate starting salary (GSS) relative to the median male GSS (an average of 100.2 per cent for the period 1977-2011), followed closely by engineering (100.1 per cent). These were the only two fields of education where median starting salaries for female graduates were, on average, higher than those for male graduates - although in recent years the figures for earth science graduates have dropped below 100 per cent.

Dentistry remained the field of education with the lowest median female GSS relative to median male GSS, on average, for the period 1977-2011 (92.9 per cent), followed by architecture and building (93.0 per cent), art and design (94.6 per cent) and medicine (95.7 per cent – see Table 10).

If we examine these figures for the last 10 years only, we see that on average for that period, female salaries were higher than males for the fields of pharmacy and social work, and the same for engineering. For earth science graduates, this figure was 98.3 per cent.

Differences in median GSS for males and females appear to be related, at least in part, to differing sex enrolment profiles. Male graduates tend to be overrepresented in the fields of education with higher median starting salaries while female graduates tend to be overrepresented in the fields of education with lower median starting salaries (*see supplementary Table M in Graduate Salaries 2011 Tables and Figures*).

When the fields of education are ranked according to their median starting salary, we see that males dominate the top five ranked fields with 25.8% of all males graduating from one of these fields, compared with only 7.2 per cent of females. Most of this difference appears to be due to a considerable over-representation of male graduates in the field of engineering (20.1 per cent of all male graduates compared with only 2.7 per cent of all female graduates).

“The median starting salary for female graduates aged less than 25 and in their first full-time employment (\$50,000) was equivalent to 96.2 per cent of the median starting salary earned by their male counterparts (\$52,000).”

Another factor which may contribute to the difference in median starting salaries for male and female graduates is the average number of hours graduates spend working in a given week (*see supplementary Table N in Graduate Salaries 2011 Tables and Figures*). Of the 23 fields of education examined in this report, statistically significant sex differences in average working hours were observed in eight of them.

The largest significant sex difference in mean hours worked was observed for law and architecture and building graduates, where males worked an average of 2.6 hours more per week than their female counterparts, followed by:

- earth sciences (2.3 hours)
- economics and business (1.8 hours)
- psychology (1.7 hours)
- agricultural sciences (1.6 hours).

There were even fewer statistically significant sex differences for graduates' hourly rate of pay, with evidence for such a difference only existing for three of the fields of education under examination (*see supplementary Table N in Graduate Salaries 2011 Tables and Figures*). None of these differences were of note, however, with the largest difference an additional \$1.10 per hour for male graduates from the field of economics and business.

While it is outside the scope of the GDS to examine relative salary rates for males and females in the years following graduation¹, the ABS reported in 2005 that females with a bachelor degree qualification who were employed full-time earned an average annual salary equivalent to 73.7 per cent of that of their male counterparts (ABS 2006a). It has been estimated that the sex salary gap in the UK is around 10 per cent for new graduates (in Australia this figure is 5.7 per cent on average - *see Table 10*), but rises to around 25 per cent by the time graduates reach their mid 40s (Elias & Purcell 2004).

The gap between male and female AWE in the wider Australian population (for

Table 10: Median starting salaries for female graduates as a percentage of median starting salaries for male graduates based on bachelor degree graduates aged less than 25 and in first full-time employment, by field of education, 1977-2011^{1,2}

	1977	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Accounting	97.7	96.0	99.1	98.3	99.3	98.0	98.7	98.2	98.4	99.5	94.0	100.0	100.0	99.6	98.0	96.0	98.8
Agricultural Science	96.0	87.5	95.2	92.6	93.5	93.8	94.8	100.0	92.3	97.6	103.2	98.7	97.6	96.0	100.0	100.8	100.0
Architecture & Building	103.4	100.0	95.8	86.7	97.1	92.8	89.0	96.6	96.6	89.7	100.5	89.5	90.4	85.1	100.0	97.8	100.0
Art & Design	†	†	†	†	†	†	†	†	†	†	†	†	90.0	99.0	93.2	95.7	91.7
Biological Sciences	100.0	101.0	98.2	94.5	91.7	99.3	93.9	99.4	99.5	98.0	98.6	97.8	97.9	96.8	97.7	100.4	96.5
Computer Science	101.0	99.1	100.0	99.3	98.1	97.1	100.0	101.0	99.5	97.4	97.6	98.5	99.3	99.3	100.0	93.6	100.0
Dentistry	94.2	90.3	86.3	80.7	91.7	83.3	82.2	87.7	90.3	95.0	93.9	88.6	83.4	92.8	95.0	105.2	96.9
Earth Sciences	†	93.8	102.5	92.4	95.0	104.6	105.2	101.6	96.7	95.7	96.6	108.0	96.8	106.3	112.4	100.0	100.0
Economics, Business	96.8	93.4	97.4	96.1	98.6	98.7	100.6	99.4	100.0	100.0	98.2	97.9	98.8	99.6	98.0	98.4	98.4
Education	95.1	99.1	101.7	93.7	94.2	96.0	100.0	97.9	101.0	99.5	99.1	100.0	97.6	95.9	93.3	92.6	94.5
Engineering	95.1	108.6	98.4	103.4	98.8	97.2	99.5	100.0	100.0	98.2	100.0	98.8	97.1	100.7	100.3	101.7	98.7
Humanities	100.0	96.0	93.8	98.3	91.5	92.7	99.4	98.8	99.4	101.0	98.6	95.9	97.3	99.1	100.0	94.6	96.0
Law	98.2	100.0	100.0	102.4	102.0	94.4	99.1	116.5	107.6	110.1	97.7	95.8	94.1	92.5	95.7	97.9	91.7
Mathematics	97.9	100.0	98.3	97.8	98.1	98.7	97.1	97.3	95.1	99.1	95.9	100.0	96.9	94.4	97.8	93.8	92.5
Medicine	90.7	96.0	97.4	97.1	98.5	97.7	92.9	95.7	98.0	98.4	98.6	96.4	95.4	85.7	92.1	100.0	95.0
Optometry	†	†	†	†	†	†	†	†	†	†	97.0	96.6	106.7	101.7	88.2	91.4	91.4
Paramedical Studies	†	†	†	†	†	†	†	†	†	†	97.5	92.0	96.3	96.9	96.2	92.6	99.2
Pharmacy	91.9	101.2	104.8	99.0	100.0	97.5	95.4	100.7	98.6	101.3	100.6	93.8	109.3	94.4	100.0	105.8	95.5
Physical Sciences	98.9	101.8	99.2	98.5	96.0	100.6	101.8	98.4	93.1	94.8	97.4	99.6	100.0	94.8	94.5	98.2	102.6
Psychology	96.9	98.0	96.4	97.6	98.6	96.7	96.3	95.1	100.0	97.1	95.6	96.1	98.3	99.2	94.6	100.8	104.2
Social Sciences	100.0	103.2	101.9	95.2	93.6	93.9	101.3	98.8	99.5	103.1	94.6	97.3	91.7	90.6	100.0	95.5	100.0
Social Work	96.2	99.1	103.3	100.7	104.2	103.0	100.0	97.0	99.0	99.1	95.3	98.3	†	†	†	†	93.9
Veterinary Science	†	98.2	94.3	96.2	100.0	100.7	98.1	94.3	99.5	98.6	99.1	92.4	96.2	98.9	100.7	96.4	100.0
TOTAL	95.9	95.5	94.2	92.6	93.5	95.1	93.2	95.7	93.1	95.8	93.3	91.6	93.4	94.3	92.6	92.6	94.8

¹ See *Graduate Salaries 2011 Explanatory Notes*.

² Data from 1978 are incompatible with those from other years and have been excluded from the series.

¹ See *Beyond Graduation 2011* (GCA 2012a) for a detailed examination of graduate salary growth in the first three years following graduation.

full-time employees) has been shown to increase with age. In 2009, the ratio of female to male average weekly earnings for 20-24-year-olds in the wider Australian population was 0.93 (i.e. females in this age group received average weekly earnings equivalent to around 93 per cent of that of their male counterparts), while the ratio for 45-54-year-olds was 0.74 (ABS 2011a). A range of explanations for this sex wage gap have been proposed, including access to overtime, a disproportionate share of women in lower-paid occupations, the undervaluation of skills in female dominated industries and labour market discrimination (Chapman 2004; Preston 2007).

It should be noted that the overall sex wage gap² in Australia as measured by the Organisation for Economic Cooperation and Development (OECD), 14.4 per cent, is below the average of 17.6 per cent for OECD countries. Australia recorded the eighth-lowest sex wage gap of the 20 participating countries, ranking above both the USA and UK (OECD 2006). Australia's sex wage parity relative to other OECD countries has declined in recent years, falling from a rank of second lowest in 2000 to its current rank of eighth lowest in 2006. Australia's sex wage gap did shrink in nominal terms between 2000 and 2006, however, falling from 17.2 per cent to 14.4 (OECD 2006).

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Avg
	100.0	98.5	96.4	98.9	100.0	99.0	102.4	94.3	97.1	100.0	97.2	96.1	97.6	100.0	100.0	100.0	95.8	98.3
	94.8	97.4	102.2	98.6	97.2	100.0	100.0	100.0	100.3	94.3	103.3	99.0	102.5	97.7	96.6	102.3	102.2	97.9
	92.0	91.9	96.2	93.6	96.4	89.7	100.0	88.2	97.1	91.7	85.0	91.5	88.4	88.9	85.6	88.9	86.0	93.0
	95.8	100.0	96.2	92.6	94.2	93.3	100.0	96.7	88.5	96.7	96.9	99.1	94.4	87.8	87.5	97.4	95.2	94.6
	98.9	98.6	100.0	96.6	100.0	103.3	95.0	98.9	97.2	97.3	100.0	102.6	100.0	96.4	98.9	101.1	98.3	98.4
	96.7	99.7	99.7	97.0	100.0	100.0	100.0	95.5	97.4	100.0	97.5	95.2	104.7	95.7	100.5	100.0	97.1	98.7
	86.8	100.0	92.0	90.7	87.5	104.2	90.0	89.7	86.5	106.2	95.4	100.7	100.7	92.0	100.0	104.9	93.8	92.9
	105.6	97.7	101.7	100.0	112.1	105.8	92.1	97.0	100.0	105.0	98.5	95.3	91.3	122.4	96.4	91.1	85.7	100.2
	96.3	96.4	95.9	93.3	97.4	93.8	94.1	94.3	97.5	94.6	90.0	95.0	95.2	91.1	93.9	90.0	90.0	96.2
	96.4	95.3	98.4	97.2	99.1	100.0	97.6	98.9	98.8	97.6	100.0	96.6	100.0	97.9	100.0	100.0	100.0	97.8
	100.0	101.5	99.1	100.0	102.9	102.7	101.3	100.0	100.0	100.0	100.0	100.0	100.0	101.9	96.6	101.8	100.0	100.1
	94.2	96.2	98.1	100.4	93.3	100.0	97.0	97.0	94.3	91.9	97.2	96.1	94.7	95.2	96.5	93.3	97.7	96.6
	96.0	95.2	100.0	100.0	96.8	97.0	92.1	100.0	97.4	92.7	97.6	96.2	97.8	97.9	91.7	94.8	96.2	98.1
	92.9	90.3	93.4	93.8	93.0	93.0	94.7	96.2	100.8	100.0	92.1	97.6	100.3	97.0	93.5	100.0	100.0	96.4
	100.0	100.0	100.0	95.2	93.3	100.0	90.0	100.0	90.0	96.0	97.6	89.1	94.3	94.3	91.8	99.1	96.7	95.7
	96.3	100.0	98.7	99.2	92.9	91.7	109.8	91.3	99.0	89.4	89.7	109.6	†	88.2	108.3	100.0	97.2	97.1
	96.3	94.4	96.6	99.0	93.8	95.2	94.3	97.2	94.7	95.0	100.0	97.6	95.6	95.7	97.9	99.0	96.2	96.2
	100.0	102.4	102.3	92.1	103.3	83.3	100.0	104.0	100.7	98.0	99.7	104.9	96.5	97.7	100.0	102.9	101.1	99.4
	96.4	96.7	96.7	99.3	94.1	93.3	98.0	94.1	96.7	102.7	90.0	101.3	93.2	98.1	99.0	105.0	106.0	98.0
	96.3	101.9	108.9	96.6	97.9	93.6	101.5	94.3	97.5	95.6	95.0	95.2	97.0	95.8	100.0	105.5	94.0	97.9
	89.3	93.3	103.2	91.7	95.9	90.9	95.8	91.5	97.1	100.0	98.3	89.5	90.5	96.5	91.1	99.3	104.8	96.4
	96.4	96.6	99.7	97.5	96.3	†	†	94.6	102.2	99.7	100.0	102.4	97.8	105.6	100.0	†	102.0	99.3
	100.0	100.0	100.0	103.2	97.9	95.6	94.3	98.9	100.0	99.2	93.6	97.4	100.0	96.9	94.7	†	104.7	98.1
	93.6	91.7	95.0	96.8	92.3	92.8	94.4	94.6	95.5	97.4	97.5	95.2	93.3	95.7	94.0	96.0	96.2	94.4

² The sex wage gap is measured as the difference between male and female median full-time earnings expressed as a percentage of male median full-time earnings (OECD 2006).

8.0

SALARIES PAID TO
POSTGRADUATES

“While it may be expected that PhD graduates would be earning more than masters coursework graduates, in fact the opposite is true.”

Table 11: Median salaries for postgraduates in full-time employment by level of award and field of education, 2011 (\$,000)^{a†§}

Field of Education	Postgraduate Diploma/Certificate [‡]		Masters Coursework		Masters Research		PhD		Sig.
	\$	n	\$	n	\$	n	\$	n	
Accounting	70.0	235	56.0	661	†	†	†	†	**
Agricultural Science	69.0	61	70.0	97	†	†	72.5	42	
Architecture & Building	68.0	117	50.0	449	80.0	13	80.0	17	**
Art & Design	50.0	65	60.0	112	61.0	27	78.0	37	**
Biological Sciences	70.0	256	70.0	243	58.0	19	68.0	255	
Computer Science	80.0	145	80.0	397	†	†	80.0	58	
Dentistry	100.0	42	†	†	†	†	129.0	13	**
Earth Sciences	68.5	44	78.0	23	†	†	82.5	27	**
Economics, Business	85.0	1,647	95.0	3,342	68.0	15	83.0	114	**
Education	56.0	2,047	72.0	1,329	74.0	27	85.0	101	**
Engineering	87.0	224	86.0	411	88.5	14	71.0	175	**
Humanities	70.0	939	70.0	1,074	66.0	40	75.0	178	
Law	63.0	569	80.0	549	†	†	90.0	19	**
Mathematics	80.0	59	80.0	40	†	†	72.5	42	
Medicine	75.5	125	79.5	95	†	†	75.0	89	
Optometry	83.0	38	†	†	†	†	†	†	
Paramedical Studies	70.0	1,866	75.0	1,681	80.0	20	75.0	148	**
Pharmacy	78.5	25	41.0	120	†	†	†	†	**
Physical Sciences	80.0	45	80.0	37	†	†	69.5	70	**
Psychology	63.0	263	70.3	233	†	†	73.3	141	**
Social Sciences	77.0	177	70.0	125	†	†	69.0	28	
Social Work	65.0	113	65.0	167	†	†	87.8	16	
Veterinary Science	†	†	79.5	16	†	†	†	†	
Male	79.0	3,589	83.0	5,323	78.0	110	75.0	779	
Female	64.5	5,502	70.0	5,875	69.0	113	74.0	817	
TOTAL	69.0	9,108	75.0	11,205	72.0	223	74.9	1,597	

^a See *Graduate Salaries 2011 Explanatory Notes*.

[†] Blank cells contain no, or fewer than 10, respondents

[§] Some figures in this table are based on small response numbers and consequently are subject to notable fluctuation.

[‡] The heading 'Postgraduate Diploma/Certificate' includes graduate certificates and graduate/postgraduate diplomas.

* = difference statistically significant at 5 per cent level; ** = difference statistically significant at 1 per cent level.

An examination of salaries paid to postgraduates is not as straightforward as an examination of salaries paid to younger bachelor degree graduates in their first full-time jobs. Postgraduates may have returned to study at any stage of their careers, so their salaries cannot be analysed in a simple 'first full-time employment' manner¹.

- Postgraduate diploma/certificate award graduates who were in full-time employment at the time of the 2011 AGS earned a median salary of \$69,000
- Graduates who had completed a masters degree by coursework earned a median salary of \$75,000
- Masters degree by research graduates earned a median salary of \$72,000.
- PhD graduates earned a median salary of \$74,900 (see Table 11).

Statistically significant salary differences based on postgraduate level of award were observed in 13 of the 23 fields of education under examination which contained a sufficient number of responses to allow comparisons to be made.

- The largest difference was observed for pharmacy graduates, with \$37,500 separating the median salaries of masters coursework graduates (\$41,000) and postgraduate diploma/certificate graduates (\$78,500).
- Large differences between postgraduate levels were also observed for:
 - architecture and building graduates (\$30,000)
 - education and dentistry (both at \$29,000)
 - art and design (\$28,000)
 - economics, business (\$27,000).

- No difference was observed for computer science and veterinary science graduates.

Of these postgraduate award levels, the highest growth in median starting salary since 1994 was 91.7 per cent for postgraduate diploma/certificate graduates (see supplementary Table O in *Graduate Salaries 2011 Tables and Figures*). In fact, postgraduate diploma/certificate graduates from some fields of education earned a higher median starting salary than masters coursework graduates from the same field (see Table 11).

This was particularly noticeable for graduates from the fields of:

- pharmacy (\$37,500)
- architecture and building (\$18,000)
- accounting (\$14,000)
- social sciences (\$7,000).

These salary differences may be attributable, at least in part, to the nature of the particular courses offered at each level of award within particular higher education institutions, as well as differences between the individual graduates themselves (e.g. previous employment and educational history, career goals and ambitions). Moreover, while postgraduate diploma/certificate graduates from these fields of education earned higher median salaries than their masters coursework counterparts in 2011, these salary figures tend to fluctuate over the years and are by no means typical for each of these fields of education.

As was the case in previous years, male postgraduates earned higher median salaries than their female counterparts at all levels of award (see Table 11).

- The female median salary was lowest relative to the male median salary at the postgraduate diploma/certificate award level, where female graduates earned a median salary equivalent to 81.6 per cent of the median salary earned by male graduates (or \$14,500 lower in nominal terms).
- Conversely, the greatest parity between sexes is evident at the PhD award level, with a median female salary equivalent to 98.7 per cent that of male graduates (or only \$1,000 lower in nominal terms). In relative terms, PhD graduates have experienced the greatest sex parity in median salaries earned by postgraduates since 2007.

While it may be expected that PhD graduates would be earning more than masters coursework graduates, in fact the opposite is true. The differing study and employment profiles of postgraduates at different award levels may help to explain this apparent anomaly.

Compared with masters coursework graduates, PhD graduates were much more likely to be in their first full-time employment in 2011 (27.0 per cent compared with 23.3 per cent). They were also much less likely to have been in full-time employment with their current employer in their final year of study (51.7 per cent of masters coursework graduates compared with 38.3 per cent of PhD graduates) and were much more likely to have studied on a full-time basis (35.4 per cent of masters coursework graduates compared with 63.6 per cent of PhD graduates) (see supplementary Table P in *Graduate Salaries 2011 Tables and Figures*).

¹ A more detailed examination of postgraduate salaries is presented in the report *Postgraduate Destinations 2010* (GCA 2012c).

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