

DISPARITIES IN THE PAY AND BENEFITS OF
BACHELOR DEGREE GRADUATES:
THE ROLE OF PAY-SETTING ARRANGEMENTS

Prepared for

Office for Women;
Department of the Prime Minister and Cabinet

By



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Abstract

Using data from the 2012 Beyond Graduation Survey, this report investigates the existence of an aggregate gender pay gap for young bachelor degree graduates in full-time employment three years after the completion of their studies and the extent to which any such pay gap can be explained by differences in pay-setting arrangements for men and women. The average salary for men in our sample is equal to 115% that for women, with a similar disparity observed when considering graduates' overall salary package (117%). The magnitude of this effect is smaller after controlling for a range of enrolment and employment characteristics, but remains positive and significant. Much of the disparity, however, is unexplained by our analysis. There is no evidence that women trade off salary for additional non-salary benefits, with most of the benefits addressed in our study received by a larger percentage of men than women. In terms of the number of benefits obtained, men also reported a slightly higher average than women (3 and 2, respectively). Women were far more likely than men to have their salary set by an award and less likely by an individual agreement, with similar percentages of men and women having their salary set by a collective agreement or a method not addressed on the survey. Large gender pay gaps favouring men were observed in the subsamples that had their pay set by an award or individual agreement, which remained significant after controlling for a range of enrolment and occupational characteristics. Both of these pay gaps are likely related to differences in occupational characteristics not captured in our data; however gender differences in negotiating behaviour may play a role in relation to the individual agreement subsample. The most common selection activity for men and women alike was an interview with one or two interviewers, with this being more common for men. Women, on the other hand, were more likely to have gone through a panel interview.

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1. Introduction

1.1 Authorisation

This report has been prepared by Graduate Careers Australia (GCA) for the Office for Women (OfW) of the Department of the Prime Minister and Cabinet, as an analysis of the role of pay-setting arrangements in the gender wage gap for Australian graduates.

1.2 Purpose and scope

Anecdotal evidence suggests that gender differences in negotiating behaviour can have an impact on the gender wage gap in situations where graduates negotiate their starting salary.¹ To investigate this, a set of survey questions was developed by GCA and OfW and incorporated into the 2012 Beyond Graduation Survey (BGS), which surveyed Australian university graduates three years after the completion of their studies. This report presents the responses to these survey questions, with a focus on how pay setting arrangements affect the starting salaries of male and female graduates. In particular, the following research questions are addressed:

- Is there a relationship between pay-setting arrangements and earnings?
- To what extent do pay-setting arrangements contribute to the gender wage gap?
- Are there gender differences in terms of overall remuneration packages?
- Do graduates trade off wages for non-wage benefits?

1.3 A note on the tables

Two different types of response figures are given in this report. In tables based on multiple-response items (i.e. where respondents could select more than one response option), the number of respondents selecting a particular option is given as “n(yes)”, with the total number of respondents

¹ Background on the gender wage gap in Australia can be found in, e.g., Cassells, R., Vidyattama, Y., Miranti, R., & McNamara, J. (2009). The impact of a sustained gender wage gap on the Australian economy. NATSEM, University of Canberra.

given in the bottom row of the table. In tables based on single-response items, the total number of respondents is given as “n”.

1.4 A note on the estimates

Due to the extent of non-response to the BGS, it is appropriate to consider the resultant pool of secured responses to be a sample of the overall graduate population. As such, estimates presented in this report should be considered point estimates rather than population parameters, unless otherwise stated in the text. While point estimates have been presented throughout this report in the interests of simplicity and parsimony, it should be noted that they are subject to sampling error and should be interpreted with due caution, especially when the sample is subdivided.

1.5 Report structure

The rest of this report is organised as follows. Section 2 presents an overview of the BGS data on which the analysis is based. Section 3 presents a descriptive analysis of the pay-setting questions incorporated in the 2012 BGS. Section 4 investigates the influence of pay-setting arrangements on the pay of recent bachelor degree graduates, with a focus on addressing the four research questions listed in Section 1.2. Conclusions are presented in Section 5. The pay-setting questions added to the 2012 BGS are presented in Appendix A.

2. Data

2.1 Beyond Graduation Survey

Since 1974, graduates from Australian higher education institutions have been invited to participate in a nationally-representative outcomes survey administered around four months after course completion. The current incarnation of this survey is known as the Australian Graduate Survey (AGS), which is administered by GCA on an annual basis. The BGS is a cohort-style follow-up to the AGS, whereby graduates who respond to the AGS are invited to complete an online survey focusing on their outcomes and activities three years after graduation. The 2012 BGS, which was used as a vehicle for the pay-setting questions on which this report is based, was sent by email to graduates who completed the 2009 AGS. The vast majority of higher education institutions that participated in the 2009 AGS also participated in the 2012 BGS, ensuring a large, nationally representative sample from a wide range of higher education providers. The response rate to the survey was approximately 17%, which is a typical response rate for the BGS. A total of 12,876 usable responses were received.

When completing the BGS, all respondents in paid work at the time of the survey were instructed to complete a set of five survey questions related to the pay-setting arrangements and overall remuneration package relating to their (then) current employment. Demographic and general employment information were obtained from the standard BGS questionnaire.

The analysis in this report is based on bachelor degree graduates who were aged less than 25 when they first responded to the AGS and were in full-time employment at the time of the BGS. This cohort of “traditional” graduates is the main focus of GCA reports on graduate salaries. Because previous work experience is a key wage determinant, and because neither the AGS nor BGS collect data on previous work experience, focusing on this cohort minimises the influence of this potential confounding factor. This is of particular relevance to a study on the gender wage gap, as previous research has identified that differences in work experience between men and women is a key driver of the gender wage gap. Because our survey population is graduates who have spent up to three years in the labour force, the confounding effect of work experience is not entirely addressed by focusing on

traditional graduates. Readers are encouraged to bear this in mind when interpreting the results given in this report.

Following standard GCA practice for the BGS, graduates who did not indicate their field of education were excluded from the data file. Outliers on the salary and salary package variables were removed from the analysis file to avoid any skewing of the data. In line with the approach used for the BGS, this necessitated the removal of salary and salary package observations below the second percentile and above the ninety-ninth. Graduates who did not indicate their gender were also removed from the sample, given the importance of this variable in the context of this analysis. This resulted in an analysis sample of 3,091 graduates, consisting of 1,051 men and 2,040 women. Because none of the survey questions were mandatory, the number of responses to any particular question may be less than this total number of respondents in the sample.

2.2 Sample descriptives

Summary statistics for our analysis sample are presented in Table 1. Women constituted 66% of the sample, which echoes the gender skew observed in the broader graduate population. In all, 89% of graduates indicated that they spoke English as their main language at home, with a non-English speaking background somewhat more common amongst men (13%) than women (11%). Only 2% of graduates in our sample identified as having some type of disability. The vast majority of graduates completed their studies full time (92%), which is not unexpected given the traditional graduates in our analysis sample. Women were somewhat more likely than men to have completed their studies full time (93% and 90% respectively). A similarly large proportion of graduates completed their studies on campus, with 90% indicating internal enrolment. Men were marginally more likely than women to have undertaken their studies in this way (92% and 89% respectively), with women more likely to have undertaken their studies externally or via mixed-mode study. In all, 87% of graduates were in paid work in their final year of study, with women more likely than men to have been so employed (89% and 85% respectively).

As a percentage of all enrolments for each gender, men were most likely to be graduating from the broad fields of management and commerce (24%), engineering and related technologies

(18%) and society and culture (16%), and were least likely to be graduating from the broad study fields of education (4%), architecture and building, and agriculture and environmental studies (each with 2%). Women were most likely to be graduating from society and culture (24%), management and commerce (19%) and health (18%), with relatively small percentages graduating from the broad study fields of agriculture and environmental studies (3%), information technology, and agriculture and related technologies (each with 2%), and architecture and building (1%). Relative to women, men were especially over-represented in the fields of engineering and related technologies (16 percentage points [pp]), information technology (6 pp), and management and commerce (5 pp). This situation was reversed in the fields of health (10 pp), society and culture (8 pp), and education (7 pp), and to a lesser extent in creative arts (3 pp).

Table 1.

Summary statistics (% , n)

Cohort		Men		Women		Total	
		%	n	%	n	%	n
Gender	Male					34	1,051
	Female					66	2,040
Main language spoken at home	English	87	917	90	1,832	89	2,749
	Other	13	132	10	205	11	337
Disability identification	Yes	2	17	2	34	2	51
	No	98	1,029	98	2,002	98	3,031
Main attendance type	Mainly full time	90	948	93	1,895	92	2,843
	Mainly part time	10	102	7	141	8	243
Main attendance mode	Internal	92	971	89	1,819	90	2,790
	External	1	10	2	38	2	48
	Mixed mode	7	69	9	178	8	247
Broad field of education	Natural and physical sciences	10	106	10	195	10	301
	Information technology	8	89	2	32	4	121
	Engineering and related technologies	18	194	2	44	8	238
	Architecture and building	2	21	1	28	2	49
	Agriculture and environmental studies	2	20	3	58	3	78
	Health	8	80	18	361	14	441
	Education	4	47	11	227	9	274
	Management and commerce	24	250	19	384	21	634
	Society and culture	16	168	24	498	22	666
Creative arts	7	76	10	213	9	289	
Paid work during your final year of study	Yes	85	878	89	1,789	87	2,667
	No	15	155	11	230	13	385

The mean full-time salaries and salary packages earned by male and female graduates are presented in Figure 1, with error bars representing the 95% uncertainty interval, calculated as 1.96 times the standard error. Simply put, overlapping error bars infer no statistically significant difference in mean full-time salaries/salary packages between men and women. Statistical significance should not be confused with the common meaning of significance (i.e. important, notable). Being statistically significant does not necessarily make a difference important or notable. It simply means that any such difference can be reliably inferred to exist in the overall graduate population. It is arguable, however, that the magnitude of an effect is at least as important as the statistical significance of the effect, as statistical significance is influenced by sample size.



Figure 1.

Average salaries and salary packages of male and female graduates in full-time work at the time of the 2012 BGS, with 95% uncertainty intervals

It can be seen that, at the overall level, male graduates earn a higher full-time salary than female graduates three years after course completion, with men earning an average salary of \$73,411 and women \$63,937. From Figure 1, it can be calculated that the average full-time salary for men is 115% of that for women. Likewise, men still earn more at an overall level when the total value of

their salary package is considered instead of their base salary, with men reporting an average package value of \$82,444 and women \$70,350. In fact, the gap between men and women widens slightly when considering their overall salary package, with the average full-time salary package for men 117% of that for women. It is important to note that these overall figures do not account for differences in occupational destinations for men and women, which may influence their earnings. Male graduates, for example, are over-represented in certain high-paying fields, such as engineering and related technologies. This is addressed in the analysis presented in Section 4 of this report.

3. Descriptive analysis of new questions

3.1 Package benefits

When completing the 2012 BGS, employed graduates were instructed to indicate which, if any, benefits they receive as part of their salary package. Respondents were permitted to select more than one benefit. The results from this question are summarised in Table 2, split by gender. The most common benefit for men and women alike was company-paid training and development, indicated by 74% of men and 77% of women who responded to this question. Flexible working arrangements was a fairly common benefit, with 54% of men and 48% of women indicating that they received this as part of their salary package. A performance-related bonus, additional leave and a mobile device for their personal use (e.g. smartphone, laptop, tablet computer) were also relatively common. On the other hand, housing or a housing allowance, and a car or car allowance were the least common for men and women alike.

Table 2.

Benefits received by graduates as part of their overall salary package (X, n)

Package benefit	Men		Women		Total	
	%	n	%	n	%	n
Company-paid training and development	74	626	77	1,233	76	1,859
Additional leave	31	259	26	412	27	671
Flexible working arrangements	54	459	48	774	50	1,233
Performance-related bonus	35	292	23	367	27	659
Housing or housing allowance	8	71	5	76	6	147
Car or car allowance	10	84	7	112	8	196
Additional superannuation	21	176	15	243	17	419
Relocation assistance	16	132	10	153	12	285
Mobile device	31	259	21	342	25	601
Other	11	96	14	218	13	314

With the exception of company-paid training and development and the “other” category, a larger percentage of men than women indicated receiving each benefit. The largest gap between men and women in this regard was observed in relation to performance-related bonuses, received by 35% of men and 23% of women, which represents a difference of 12 percentage points. A large gap was also recorded in relation to mobile devices, with 10 percentage points separating male and female

graduates. Notable differences were also observed for flexible working arrangements, additional superannuation and relocation assistance (each with 6 pp), and additional leave (5 pp).

The average number of benefits received by graduates can be determined by summing together these ten variables for each graduate and then taking the average (X). The results of this analysis is presented in Table 3, split by gender. It can be seen that men receive, on average, three of these benefits as part of their total salary package, whereas women receive two.

Table 3.

Average number of benefits received by graduates as part of their overall salary package (X, n)

	Men		Women		Total	
	X	n	X	n	X	n
Average number of benefits	3	843	2	1,606	3	2,449

3.2 Pay-setting arrangements

Graduates were asked to indicate the method by which their pay was set when they started their current employment. Respondents were presented with a list of four options and were instructed to select one. The results of this item are presented in Table 4. It can be seen that women were much more likely than men to have had their salary set by an award (15 pp) and less likely to have had their salary set by an individual agreement (17 pp). Similar percentages of men and women had their salary set by a collective agreement or other pay-setting method, the latter being selected by only a small minority of men (2%) and women (3%).

Table 4.

Pay-setting arrangements (% , n)

Pay-setting arrangement	Men	Women	Total
Award only	18	33	28
Collective agreement	29	29	29
Individual agreement	52	35	41
Other	2	3	3
Total (%)	100	100	100
n	903	1,804	2,707

3.3 Negotiating salary and benefits

Graduates were also asked to indicate whether they negotiated their salary package when starting the job they held at the time of the 2012 BGS. Again, respondents were given a list of mutually-exclusive response categories and instructed to select only one. As shown in Table 5, men were more likely to have negotiated than women, with 83% of women indicating that they did not negotiate their salary package compared with 78% of men. Still, these figures show that relatively few graduates even attempted to negotiate their salary package. This may stem from the fact that the individuals in the sample are relatively recent graduates, many of whom may feel that they lack the necessary experience to effectively negotiate their salary package. Overall, 13% of men and 10% of women successfully negotiated a better salary, while only 2% of men and 1% of women were able to negotiate better non-salary benefits, or both. In all, 16% of men and 12% of women were able to improve their salary and/or benefits through negotiation. Conversely, a total of 6% of men and 5% of women were unsuccessful in their salary negotiations.

Table 5.

Negotiation of salary and benefits when commencing employment (% , n)

	Men	Women	Total
Yes I negotiated a better salary	13	10	11
Yes I negotiated better non-salary benefits	2	1	1
Yes I negotiated both a better salary and better non-salary benefits	2	1	1
<i>Subtotal</i>	<i>16</i>	<i>12</i>	<i>13</i>
Yes but I was not able to negotiate a better salary nor better non-salary benefits	6	5	5
No I did not negotiate my salary package	78	83	81
Total (%)	100	100	100
n	906	1,815	2,721

3.4 Selection process

Further information on the recruitment process was obtained by presenting graduates with a list of selection activities and asking them to indicate which they went through when obtaining their current employment. Respondents were permitted to select more than one activity. The results from this question are summarised in Table 6, split by gender. For men and women alike, the most common selection activity was an interview with one or two interviewers. A larger percentage of men than

women went through activity, with 74% of men and 62% of women selecting this option. A panel interview was also relatively common, with 32% of men and 39% of women indicated that they went through this activity. Men were more likely than women to have gone through a testing process (32% and 19% respectively), and also to have participated in some type of group intake (19% and 12% respectively). A substantial minority of graduates indicated that they participated in some type of selection activities not covered by these categories, with 12% of men and 14% of women indicating the residual “other” category when completing the survey.

Table 6.

Selection activities completed when obtaining current job (% , n)

Activity	Men		Women		Total	
	%	n	%	n	%	n
Group intake/group activities	19	168	12	207	14	375
An interview with one or two interviewers	74	654	62	1,106	66	1,760
Panel interview	32	285	39	701	37	986
Testing	32	278	19	332	23	610
Other	12	104	14	245	13	349

4. Statistical analysis

4.1 Pay-setting arrangements and earnings

Average salaries for men and women are presented in Figure 2, stratified by the pay-setting methods previously discussed in Section 3.2. It is evident from this graph that graduates who had their salaries set by an individual agreement were the highest earners overall, recording an average full-time salary of \$71,474, compared with \$65,931 for collective agreements and \$62,544 for salaries set by award only. The residual “other” category has not been included in this graph. This ordering is the same when investigated by gender, albeit with a far more pronounced difference between individual agreements and other pay-setting methods when considering the salaries of male graduates.

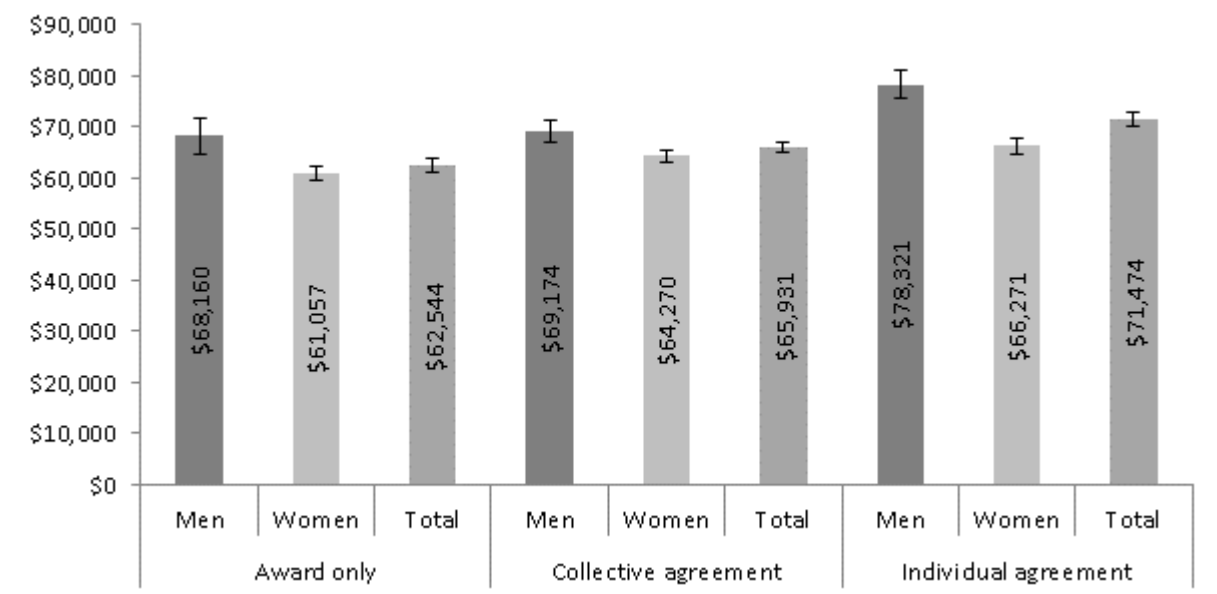


Figure 2.

Average salaries of male and female graduates in full-time work at the time of the 2012 BGS, by pay-setting arrangements, with 95% uncertainty intervals

It can also be deduced from Figure 2 that the gender wage gap is largest for graduates who had their salary set by an individual agreement, with the average salary for men in this category 118%

that for women. The gender wage gap is smallest for graduates who had their salary set by collective agreement, with a corresponding figure of 108%. The average salary for men who had their salary set by an award was 112% that for women.

It is important to note that the results presented in Figure 2 do not account for differences in characteristics of male and female graduates, which may be a contributing factor to this aggregate gender wage gap. To address this, we estimate a series of regression models using ordinary least squares (OLS). The dependent variable in this analysis is log annual salary, which means that the estimates can be interpreted as percentage differences relative to the omitted base categories. Controls are included for broad field of education, average weekly working hours, employer size, contract type and occupation. Cases with missing data on any of the variables used in this procedure are dropped from the analysis. Results are presented in Table 7. The first three models analyse whether there is an association between pay-setting arrangements and salaries after controlling for a range of confounding factors. Statistical significance at the 5% level is denoted with an asterisk. It can be seen that men who have their salary set by an award earn around 8% less than those who have their salary set by an individual agreement, which is the omitted base category. For men who had their salary set by a collective agreement, the difference was around 5%. Women who had their salary set by an award earn around 6% less, on average, than those who had their salary set by an individual agreement, although there was no significant difference for those who had their salary set by a collective agreement. These results generally reflect those presented in Figure 2.

The second set of models investigates the relationship between pay-setting arrangements and the gender pay gap by estimating three log earnings functions, one for each pay-setting method under study, with a female indicator to capture the pay disparity between men and women. Interestingly, the largest gender pay gap was observed in the award-only subsample, with women earning around 9% less than men, on average. Only slightly smaller was the pay gap observed in relation to the individual agreement subsample, in which women earned 7% less, on average, than men. This is a curious reversal of the results seen in Figure 2, which suggested that income disparity was largest amongst

graduates who had their salary set by an individual agreement.² This finding suggests that some of the pay disparity observed in relation to individual agreements can be attributed to the characteristics of the graduates who had their salary set using this method. A plausible explanation is that graduates who have their salary set by an individual agreement are also likely to be working in more lucrative sectors, in which men are over-represented. Some evidence of this is presented in Table 8, in which the broad fields of education of full-time employed graduates are split by pay-setting arrangements. More than half of all full-time employed graduates from the fields of information technology, engineering and related technologies, architecture and building, and management and commerce had their pay set by an individual agreement, which were, as shown in Table 1, fields of education in which male graduates were over-represented. Even after controlling for a range of confounding factors, a sizable gender pay disparity remains in the individual agreement subsample. It is possible that this disparity is related to differences in negotiating behaviour between men and women. Some female graduates may be less comfortable negotiating their salary than their male counterparts, which may result in a lower salary in some cases. This is difficult to investigate statistically due to the relatively small number of graduates who negotiated their salaries (see Table 5).

Table 7

Regression estimates on the relationship between pay-setting arrangements, full-time (log) salaries and the gender wage gap

	Gender			Pay-setting arrangement		
	Total	Men	Women	Award only	Collective agreement	Individual agreement
Female	-0.063*	-	-	-0.089*	-0.029	-0.071*
Award only	-0.064*	-0.080*	-0.055*	-	-	-
Collective agreement	-0.024	-0.054*	-0.003	-	-	-
R-squared	0.25	0.26	0.20	0.22	0.16	0.30
n	2,373	820	1,553	656	713	1,004
Controls						
Broad field of education		Yes			Yes	
Working hours		Yes			Yes	
Employer size		Yes			Yes	
Contract type		Yes			Yes	
Occupation		Yes			Yes	

² Similar results to Figure 2 are obtained by estimating three regression models, one for each pay-setting method, with the female indicator as the sole explanatory variable.

The pay disparity in the award-only subsample is harder to explain, although it could relate to occupational differences not captured in our regression model, which, as shown in the R-squared row of Table 7, explains only 22% of the variance in full-time salaries. It can be seen in Table 8 that pay-setting by award is common in the female-dominated study fields of health and education. It might be that women are more likely to select into less lucrative disciplines within these broad fields, such as nursing instead of medicine or dentistry in the broader health field, for example. There was no significant gender pay disparity in the collective agreement subsample after controlling for a range of enrolment and occupational characteristics;³ however the estimate was still negative. This implies that the pay disparity observed in relation to this subsample in Figure 2 can be attributed largely to the characteristics of the graduates who had their salary set by a collective agreement.

Table 8

Pay-setting arrangements, by broad field of education (% , n)

Broad field of education	Award only	Collective agreement	Individual agreement	Other	n
Natural and physical sciences	26	40	29	5	258
Information technology	12	26	60	1	106
Engineering and related technologies	11	26	60	2	221
Architecture and building	22	13	64	0	45
Agriculture and environmental studies	31	26	36	7	70
Health	49	26	22	3	375
Education	60	32	5	3	234
Management and commerce	13	20	64	2	558
Society and culture	24	36	36	3	606
Creative arts	29	24	44	2	237

4.2 Gender differences in remuneration packages

Evidence of a statistically significant gender disparity in overall remuneration packages was given in Figure 1, with the average full-time salary package for men 117% of that for women. In order to determine whether this disparity is due to differences in characteristics between male and female graduates, we estimate an OLS model with log package value as the dependent variable and controls for broad field of education, average weekly working hours, employer size, contract type, occupation and pay-setting arrangements. The results of this analysis are presented in Table 9. It can be seen that,

³ $p = .106$.

even after controlling for a range of potential confounding factors, there is still a significant gender disparity in terms of overall remuneration packages of around 6%, on average. The effect is smaller in magnitude, however, once these factors have been controlled for, which suggests that some of the disparity can be attributed to observed differences in the enrolment and occupational characteristics of male and female graduates.

Table 9

Regression estimates on the gender disparity in overall remuneration packages

Female	-0.064*
R-squared	0.26
n	2,032
Controls	
Broad field of education	Yes
Working hours	Yes
Employer size	Yes
Contract type	Yes
Occupation	Yes
Pay-setting arrangements	Yes

It is possible that these same confounding factors influence the benefits received as part of an overall salary package. In order to investigate whether female graduates are more or less likely than male graduates to receive a particular benefit as part of their overall package, we estimate a series of ten logistic regression models, one for each package benefit, with a binary variable indicating that the benefit was received as the dependent variable. The odds ratio on the “female” indicator variable is the main result of interest and represents the odds that a woman will receive a particular benefit compared to the odds that a male will receive it. An odds ratio greater than 1 indicates that women are more likely to receive a particular benefit than men, with the opposite being true if the odds ratio is less than 1. Controls are again included for broad field of education, employer size, contract type and occupation. The results of these estimations are presented in Table 10.

It can be seen that the only benefit that women are more likely to receive than men is the category representing “other” benefits not listed on the survey. The odds that a woman would receive company-paid training and development was 1.191 times the odds that a man would receive this same benefit, although this was not significant at a conventional level. Conversely, women have lower odds

of receiving additional superannuation or a mobile device (both with odds ratios of 0.741), additional leave (0.735), a car or car allowance (0.673), housing or a housing allowance (0.589), or relocation assistance (0.562). Men and women had approximately the same odds of receiving flexible working arrangements (0.935), and there was no significant difference between men and women in terms of receiving a performance-related bonus as part of the overall package. It is possible that some of the observed differences between men and women are related to occupational differences not captured in our models. Package benefits such as housing and relocation assistance, for example, may be more common for males because they are presumably more common in male-dominated occupations, such as mining and the defence forces.

Table 10

Logistic regression estimates of receiving particular package benefits

Package benefit	Female (odds ratio)	n	Pseudo R-sq.
Company-paid training and development	1.191	2,377	0.04
Additional leave	0.735*	2,377	0.01
Flexible working arrangements	0.935	2,377	0.06
Performance-related bonus	0.813	2,377	0.11
Housing or housing allowance	0.589*	2,377	0.08
Car or car allowance	0.673*	2,377	0.07
Additional superannuation	0.741*	2,377	0.04
Relocation assistance	0.562*	2,377	0.07
Mobile device	0.741*	2,377	0.06
Other	1.355*	2,377	0.02
Controls			
Broad field of education		Yes	
Employer size		Yes	
Contract type		Yes	
Occupation		Yes	

In order to investigate whether graduates trade off salary for non-salary benefits, we estimate two OLS models, one each for men and women. As earlier, the dependent variable was log full-time salary. Controls were included for broad field of education, average weekly working hours, employer size, contract type and occupation. Results from these models are presented in Table 11. It can be seen that there is a positive and significant relationship between salaries and non-salary benefits, with each additional benefit associated with an average increase in salary of around 4% for men and 3% for women. This does not mean that graduates are paid more when they receive additional non-salary

benefits. A more logical explanation is that graduates in higher-paying roles tend to receive more non-salary benefits than those in lower-paying roles. Based on the data available, there is no strong evidence that graduates of either gender trade off salary for non-salary benefits. It is important to note, as with the other results presented in this report, these results are based on a survey of recent bachelor degree graduates with a maximum of three years post-study labour market experience. Different cohorts in the labour market may have different experiences regarding salary, benefits and pay-setting arrangements.

Table 11

Regression estimates on the association between non-salary benefits and full-time (log) salaries

	Men	Women
Number of benefits	0.037*	0.032*
R-squared	0.28	0.21
n	781	1,437
Controls		
Broad field of education	Yes	Yes
Working hours	Yes	Yes
Employer size	Yes	Yes
Contract type	Yes	Yes
Occupation	Yes	Yes

5. Conclusions

Using labour market data from the 2012 BGS, this report has documented the existence of an aggregate gender pay gap for young bachelor degree graduates in full-time employment three years after the completion of their studies, with the average salary for men equal to 115% that for women. A similar disparity was also observed in relation to graduates' overall salary package, with the average full-time salary package for men 117% of that for women. Statistically controlling for a range of confounding factors relating to enrolment and employment reduces the magnitude of both effects, which suggests that at least some of this disparity in pay can be attributed to men being over-represented in high-paying fields and positions. Much of the gender pay disparity, however, remains unexplained by our analysis.

There is no evidence that women trade off salary for additional non-salary benefits. Out of ten non-salary benefits listed on the BGS, a larger percentage of men than women reported receiving all but two: company-paid training and development and the residual "other" category. Similar results were obtained when the gaining of benefits was modelled using logistic regression to account for differences in enrolment and employment characteristics. In terms of the number of benefits obtained, men reported a slightly higher average than women (3 vs. 2).

Regarding pay-setting arrangements, women were much more likely than men to have their salary set by an award and less likely by an individual agreement, with similar percentages of men and women having their salary set by a collective agreement and "other" pay-setting methods not listed on the survey. Large gender pay gaps were observed in the award and individual agreement subsamples, which remained after controlling for a range of confounding factors. Both are likely related to differences in the occupational characteristics of men and women; however gender differences in negotiating behaviour may play a role in relation to the individual agreement subsample. At an overall level, women reported being less likely than men to have attempted to negotiate their starting salary or benefits package, and tended to be less successful, on average, when they did so.

Information was also obtained about the selection process graduates went through to obtain the job they held at the time of the survey. For men and women alike, the most common selection activity was an interview with one or two interviewers, with this being relatively more common amongst male graduates. Women were more likely than men to have gone through a panel interview and some “other” selection process not listed on the survey, with men more likely than women to have gone through a testing process and to have participated in a group intake.

This study sought to minimise the potential confounding effect of previous work experience on salaries by focusing solely on young traditional graduates (see p.3). This approach, dictated by the data available, has two limitations. First, because the graduates in our survey population have spent up to three years in the labour force, it remains possible that work experience or time out of the workforce have had an effect on salaries. Second, limiting the data set means no reliable conclusions can be drawn about the relationship between pay-setting arrangements and earnings for older “non-traditional” graduates. As such, future research on this topic would be aided by additional information on graduates’ work history. It would be valuable to see whether any of the pay disparity between men and women can be explained by differences in previous work experience and time taken out of the workforce (generally by women) for caring responsibilities. The addition of work history items to the BGS or similar survey could facilitate this investigation.

Appendix A. Pay-setting questions added to the 2012 BGS

Thinking about the selection process you went through to obtain this job, which of the following activities did you complete? (mark all that apply)

- Group intake/group activities
- An interview with one or two interviewers
- Panel interview (three or more interviewers)
- Testing (e.g. psychometric or aptitude testing)
- Other (please specify)

How was your salary set when you first started this job?

- Award only (i.e. your salary was set by an award, and you could not be paid more than that award rate)
- Collective agreement (i.e. your salary was set by a collective or enterprise agreement)
- Individual agreement (i.e. your salary was set by an individual contract, registered individual agreement, common law contract, or an agreement to receive over-award payments)
- Other (please specify) _____

Did you negotiate your salary package when starting this job? (please select the response that best fits your outcome)

- Yes, I negotiated a better salary than was initially offered.
- Yes, I negotiated better non-salary benefits than were initially offered.
- Yes, I negotiated both a better salary and better non-salary benefits than were initially offered.
- Yes, but I was not able to negotiate a better salary nor better non-salary benefits.
- No, I did not negotiate my salary package.

Which of the following do you receive as part of your current salary package? (mark all that apply)

- Company-paid training and development
- Additional leave
- Flexible working arrangements
- Performance-related bonus
- Housing or housing allowance
- Car or car allowance
- Additional superannuation
- Relocation assistance
- Mobile device (e.g. smartphone, laptop, tablet) for personal use
- Other (please specify)

What was the value of your total annual salary package in Australian dollars on 30 April 2012? This figure should include your gross salary, other monetary benefits such as superannuation, and the value of any non-monetary benefits (e.g. car allowance). IMPORTANT: ESTIMATE IF NECESSARY. WRITE A YEARLY FIGURE.



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