

The Shortage of Sheilas

Why so Few Women Economists at Macquarie?

Abstract

Only 19 per cent of academic staff in the Economics Department at Macquarie University are women, a proportion that has not improved over the last decade. We investigate the reasons for this gender imbalance, focusing particularly on why it is that few qualified women have applied for positions. Declining numbers of economics graduates is a national phenomenon, but data from Macquarie show that this is a trend that particularly affects women. We found, from our surveys of staff and students in the Department, that the relative shortage of women is primarily related to attitudes and decisions taken either prior to the commencement of university studies or due to external influences such as pressure of family commitments. Interestingly, however, a higher proportion of female than male third-year students showed an interest in pursuing an academic career. While attitudes of staff were generally found to be gender neutral, we found some evidence that staff members could do more to encourage these students.

JEL Codes: A11, A14, A2, I21, J16

Keywords: Gender equity, women economists, undergraduate and postgraduate economics, economics teaching, Macquarie University

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Why so Few Women Economists at Macquarie?

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1. Introduction

Over the last decade, the number of women in academic positions in the Economics Department at Macquarie has declined. Casual enquiries elicited the response that there were no high quality female applicants. The veracity of this response is not being questioned here. Instead, we want and need to understand why this is the case. Why is it that, of the many women who commence studies in economics in first year, so few can be found who either have the ambition or meet the standards required for an academic career? Did they intend a career in economics or in academia in the first place? For those who have never considered such a career, what were the factors that determined their choices? For those who have considered the possibility, what happened during the course of their studies that either discouraged or encouraged them to continue their study of economics?

The above question steered us towards one major investigation: why are young women reluctant to take up a career in economics? Is there something intrinsic to the discipline that puts women off? Are they intimidated by the male dominance in the department and indeed, throughout the discipline. Or, are they just not ambitious enough? Could it be the case that the 'desire for feminine destiny – husband, home, children' (Poloma and Garland 1971: 538), and the expectation of enchanted love, overwhelms them before they first flip the introductory chapter of Rod O'Donnell's *Macroeconomic Principles* (2005) and tackle the problems and methods of economics?

2. Background and Issues

2.1 Research on Australian Economics Departments

We are certainly not alone in this enquiry into gender equity in academic staffing in economics departments or at universities. An increasing interest in the relative position of women in academic economics has sparked growing research in the area, gaining momentum in the mid-80s and continuing to the present (Ingleton 1997; Richardson 1998; Hughes 1998; Alford 1998; Mumford

2000; Hopkins 2004). The Symposium on Women in Australian Economics, chaired by Peter Groenewegen, marked a turning point in this area for Australia by calling for internationally comparable research on the status of women in economics profession (Groenewegen 1998: 4). A paper given at the same symposium by Helen Hughes, states that Australia has lagged behind other Anglophone countries - in terms of a comprehensive enquiry into both the status of women in the economics profession and the actual numbers of Australian women economists, senior or otherwise. She cites Bartlett and Mumford: only 2-3% of professors of economics in Australia are women, as opposed to 7.5% and 4.2% in the United States and United Kingdom respectively (Hughes 1998: 6). Hughes attributes this situation to the relative smallness of Australia, compared to the US and UK, making women economists 'even less visible in national debates'. Hughes states that 'with the low levels of women's participation in the past, and with continuing low entry levels, progress to significant levels of participation will be very slow' (Hughes 1998: 7).

Karen Mumford conducted a survey in 1999 on the staff lists of Australian economics departments. According to her list of all economic departments in Australia, Macquarie was ranked ninth out of 28 universities, with women making up 23.3 per cent of academic staff. The most equal distribution of was at the University of Canberra where the ratio was 50:50. Data were gathered, from websites and some staff contact, on academic grade and gender and then classified by academic grade: professors, readers, associate professors, senior lecturers, senior research fellows, lecturers, assistant lecturer, research fellows and other fixed-term positions. Mumford found that out of 754 economic academics, a total of 150 (19.9%) in all economic departments were female. Moreover, she found an increasing concentration of female academics as academic grade decreased; the lowest proportion were at professorial and reader level, while the highest proportion were associate lecturers and junior research fellows. A distribution by grade of all female economic academics in Australia showed that a majority of women were employed as lecturers and associate lecturers (46% and 24% of the cohort, respectively). The distribution of males, on the other hand, showed a more even distribution. In fact, 57% of the male economic academics were employed at the senior level¹, as opposed to 21 per cent of females (Mumford 2000: 19-20).²

Sandra Hopkins continued Mumford's research into gender equity in Australian economics

¹ Senior levels included professors, readers, associate professors, senior lecturers, and senior research fellows. Mumford estimated that there was one female professor for every 10 males, about one reader/associate professor per 5 men, one lecturer for every 4 men and less than one associate lecturer for 10 males.

² Mumford also found no difference in gender outcome between the old and new universities or between departments in varying geographical locations.

departments in 2004 and found similar results. She postulated four reasons for this under-representation of women: the ‘cohort effect’ (both time-lag and pipeline effects), the labour market effect, the lack of female mentors, and the ‘man-stream’ economics effect (Hopkins 2004).³ Firstly, the ‘cohort effect’ could partially explain the disparity in staff gender composition, particularly at senior level. She explained that not many women studied economics at university and fewer still had undertaken economic research or PhD programs in the past two decades. This shortage may produce an effect on the number of women visible in the discipline, at the top end as well as in more junior (pre-PhD) positions (Hopkins 2004: 207). If this is an important effect on women’s participation in economics academia, then the continuing decrease in female students enrolling since the mid-90s in undergraduate economics could mean a further decline in female economic academics in the future, possibly to the level of the 1960s.

The second possibility is that there may be a more active labour market for economics graduates, particularly those with bachelor or honours degrees. Such a labour market would attract both men and women out of academia early. In the public and private work arena, there is a perceived notion that job prospects and future career advancement are better than in academia. Due to the lack of visibility of women in academic economics, non-academic life will be seen as more attractive for women than for men (Hopkins 2004: 207). This possibility would be especially true if other factors also contribute to the drawing of women away from academia - factors such as family, money, high level of commitment, and perception of the economics discipline itself, to name a few.

A third possible explanation is that the lack of female mentors or role models in the discipline and the near-absence of female academics in the same department may affect future entry, advancement and retention in the department, in particular, and the discipline, in general. Hopkins found that the economics departments with a higher proportion of senior women also had a higher proportion of female staff in the same department. There could be two reasons for this outcome: one is that women are involved in the decision-making process in these departments, the other is that, due to the higher presence of women in the department, the department as a whole is more aware of gender issues governing appointment and advancement of women (that is, it is pro-active in positive discrimination) (Hopkins 2004: 207-8). Furthermore, the fact that there are more women in the department, and at senior levels, gives the impression of equality of treatment and fairness in promotion to potential female candidates. There may be a vicious circle of ‘more women = even

³ ‘Man-stream’ is a term coined by Sue Richardson.

more women' and 'fewer women = even fewer women'.

The lack of mentors for potential research students and female academics may be seen at the departmental level, where most female academic staff are junior to their male colleagues and may be perceived as more teaching-oriented and less well-qualified for promotion. Potential staff would want to see, in a future workplace, that they will have equal rights to opportunities for promotion, and be able to work well and on an equal footing with their colleagues. Female students might get the impression that to get ahead in academia women have to sacrifice too much – without any guarantee of success.

Finally, it could be that the discipline itself shuns women by excluding what they consider more important, and including only 'male-driven' issues in the main interests of the department. Many studies dealing with the decline in popularity of the economics degree have heavily emphasised the role of 'inappropriate' curriculum in making the discipline unattractive to students.⁴ Hopkins points out that the main feature of orthodox economics is concentration on the individual rather than the family or the community – that is, that human behaviour is homogenised whether collective or individual. She cites various studies which found that 'female' approaches were more heterodox and tended to concentrate on social and applied economics, both of which are considered to be 'light-weight' and 'not real economics', compared to theoretical and model-based research. However, her preliminary findings on the research interests of female academic staff in Australia are inconclusive. Her summary of web pages of women economists in Australian economics departments reveals that a substantial proportion of research interests of female academics are in econometrics and quantitative economics. 'Aside from econometrics, most women appear to do research in applied rather than theoretical issues. The issues of interest include labour Economics, feminist Economics, issues of child care, Asian economic development, environmental issues and Economics of education' (Hopkins 2004: 209). It is difficult to conclude from Hopkins' cursory examination that women in academic economics are biased towards either heterodox or orthodox economics.

A quick examination of Macquarie's economics department reveals that a majority of women in the

⁴ For discussions dealing with declining popularity of the economics degree, see Lewis and Norris (1997), Millmow (2002, 2004), Ward, Crosling and Marangos (2000, 2001); Maxwell (2003), and Azzalini and Hopkins (2002). For discussions on the inappropriateness of the economics curriculum to the labour market, see Hopkins (2004), Alford (1996, 1998), Richardson (1998), Keneley and Hellier (2001); Hellier, Keneley, Carr and Lynch (2004); and Lewis, Daly and Fleming (2004).

department have mainstream interests, while there is a substantial proportion of men who are heterodox in their research interests. The idea that women tend to prefer more heterodox economics has been an assumption born from the belief that women are better in the arts and social studies than the sciences or mathematics. The research interest of women as a contributing factor in the lack of advancement of women in the department, does not seem to be supported at Macquarie. If the department is more indulgent to orthodox points of view, then the male staff who are more heterodox in their view could also be scrutinised and 'punished' in the same way as if they were 'female'. This may affect some female students' consideration of majors, but the problem could also be gender-neutral. The orthodox view and the rigorous training in theoretical and mathematical models in economics departments may be a problem in attracting students in general rather than causing a gender imbalance.⁵

Further to Hopkins' hypotheses, there could be two additional reasons for the gender disparity in economics departments. First, conscious or unconscious discrimination may prevent women from entering academia. The former may involve conscious effort to exclude women, the latter may be an unconscious effect stemming from a prevailing culture within the department that discourages women from participating. For instance, there may be cliques and underlying cultures within a department that promote certain types of traits (such as overt self-promotion or camaraderie with people of power) that are not necessarily congruent with socially acceptable female traits. The latter could, however, be a problem in all facets of modern life in which women see themselves playing a supportive or surrogate role rather than a leadership role. They accept a subordinate position because that is what they think is expected of them. As Poloma and Garland have stated, discrimination is not a one way street (1971: 538-9). Discrimination – mainly unconscious – can come from both male and female staff members.

Second, there may be social and personal factors external to the university, such as pressures from family, friends and society that deter women from a career in economics. For instance, tolerance of domestication - this 'thread tying the dove to captivity, that women are reluctant to sever' (Poloma and Garland 1971: 532) - could go some way towards showing that while the female students in our survey (at both 100- and 300-level) saw themselves as being ambitious, they tended to choose careers that would allow them to have 'normal working hours' or work that produces earlier returns. Academia requires long-term commitment without great financial reward. It appears that the

⁵ Various authors have argued that economics departments are producing 'idiot savants' (Alford's terminology) rather than marketable economics graduates (see literature noted in the previous footnote).

common view of academia is that, for women, marriage, children and a career that requires a large and long-term time commitment, do not go hand in hand. Women may thus be more risk-averse than men in their career ambitions, opting for courses of study leading to easily identifiable job opportunities (in accounting, for example). Further, they have possibly determined their career path prior to university entrance. If this is the case, then their experience at Macquarie is unlikely to influence their decision very much and the problem of attracting women to economics careers is unlikely to be solved by measures that the department can take.

2.2 Macquarie University Economics Staff

The gender balance in the Economics Department's academic staff at Macquarie has shown no tendency to improve. Table 1 indicates that the proportion of female to male staff in the department ranged between 16 and 26 per cent during 1994 to 2005. In 2005 the share of females remains below the average for the period since 1994. Among new appointments made during this period, the female proportion was 23 per cent.

Table 1: Macquarie Economics Staff by Gender 1994-2005

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Female												
%	21%	26%	20%	19%	21%	23%	23%	25%	25%	21%	16%	19%
no.	7	9	7	6	7	7	7	8	8	7	5	6
Male												
%	79%	74%	80%	81%	79%	77%	77%	75%	75%	79%	84%	81%
no.	27	26	28	25	27	24	24	24	24	26	27	26

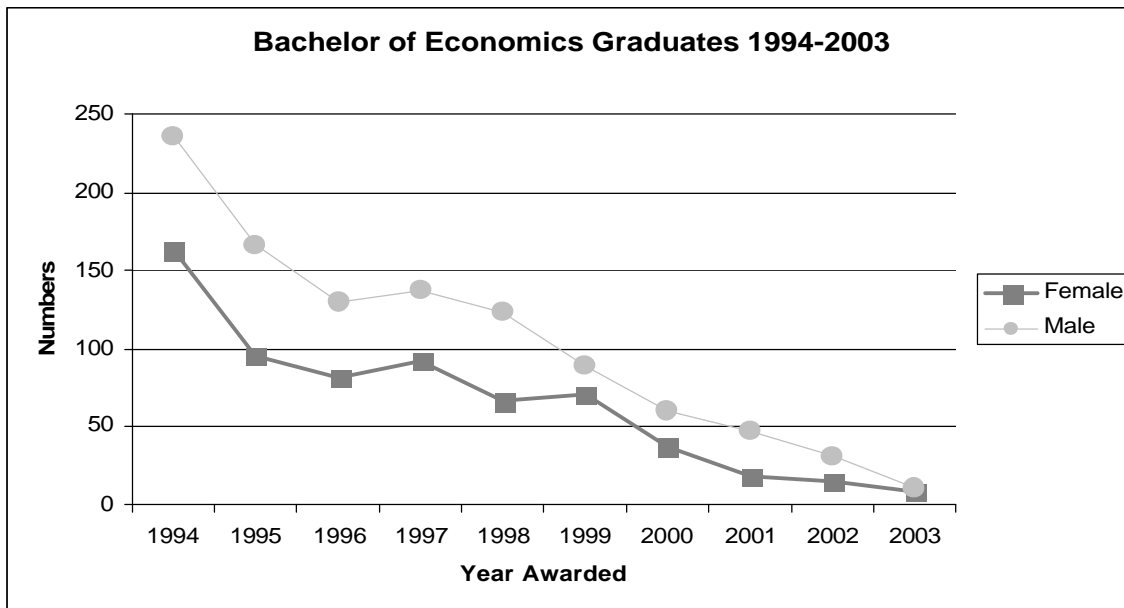
Note: Appointments made or discontinued after September of the previous year, are not included in the data for the relevant year. Actual numbers in 2005 are 7 women (20%) and 28 men (80%).

Source: Macquarie University Handbook, 1994-2005

The 'lag effect' proposes that the proportions of males and females in staff positions will reflect the proportions graduating with undergraduate and postgraduate economics degrees in previous years. Figures 1-3 show that, in the case of Macquarie, the gender imbalance in the numbers of economics graduates with bachelor, honours and postgraduate degrees was persistent between 1994 and 2003. While at bachelor level the proportion of female graduates has remained fairly constant, at around 40 per cent, the imbalance is particularly notable at doctoral level, where there was only one female PhD graduate over the decade (20 per cent of the total number). There were 12 female honours

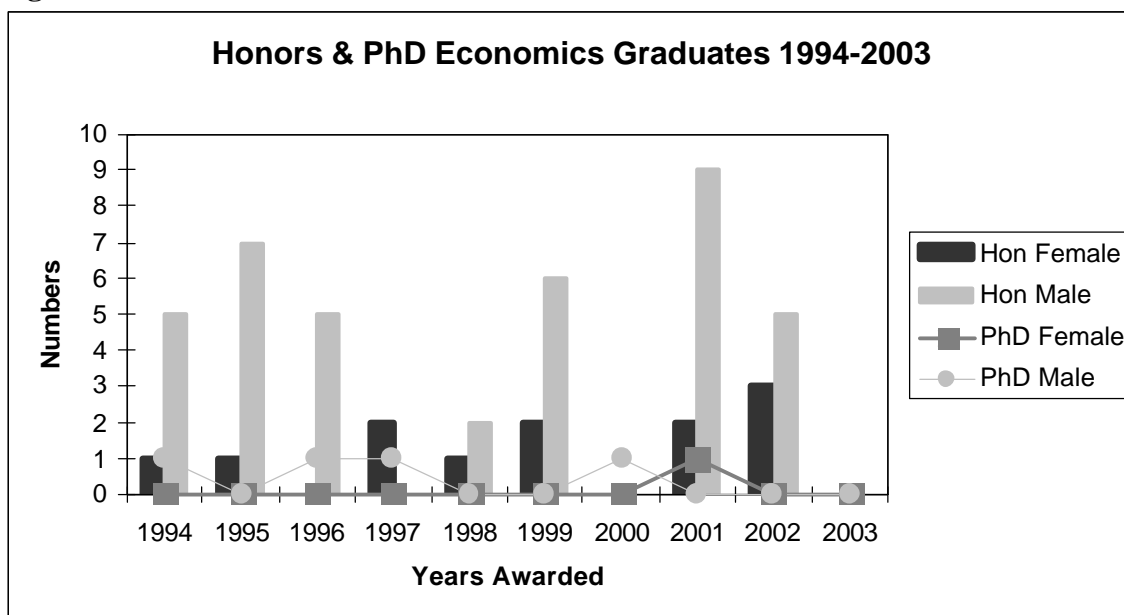
graduates over this period, as compared with 39 males (females were 24 per cent).⁶ Thus it is at the honours and PhD levels that the gender balance among graduating students most closely reflects the staff ratio. If it can be assumed that these proportions are similar at other universities, then it appears that the lag effect is quite helpful in explaining the gender imbalance among staff in the department. Unfortunately, we do not have data to test this hypothesis further.

Figure 1: Bachelor of Economics Graduates 1994-2003



Source: AMIS

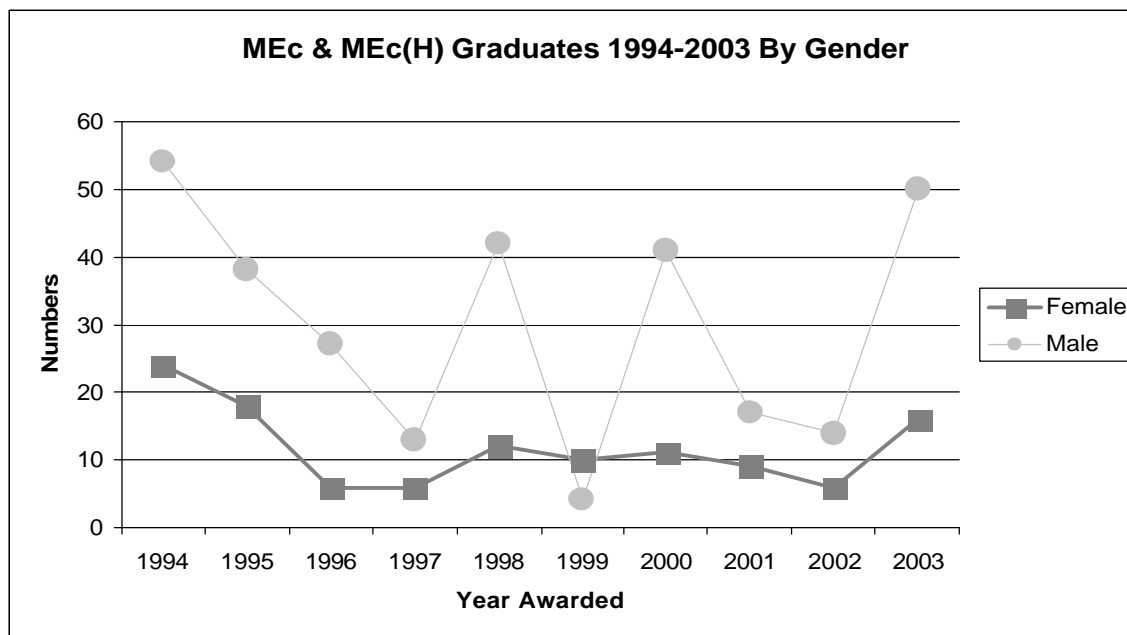
Figure 2: Honours and PhD Graduates in Economics 1994-2003



Source: AMIS

⁶ The trend in student gender imbalance will be addressed in the following section.

Figure 3: Masters Graduates in Economics 1994-2003 (MEc and MEc Hons)

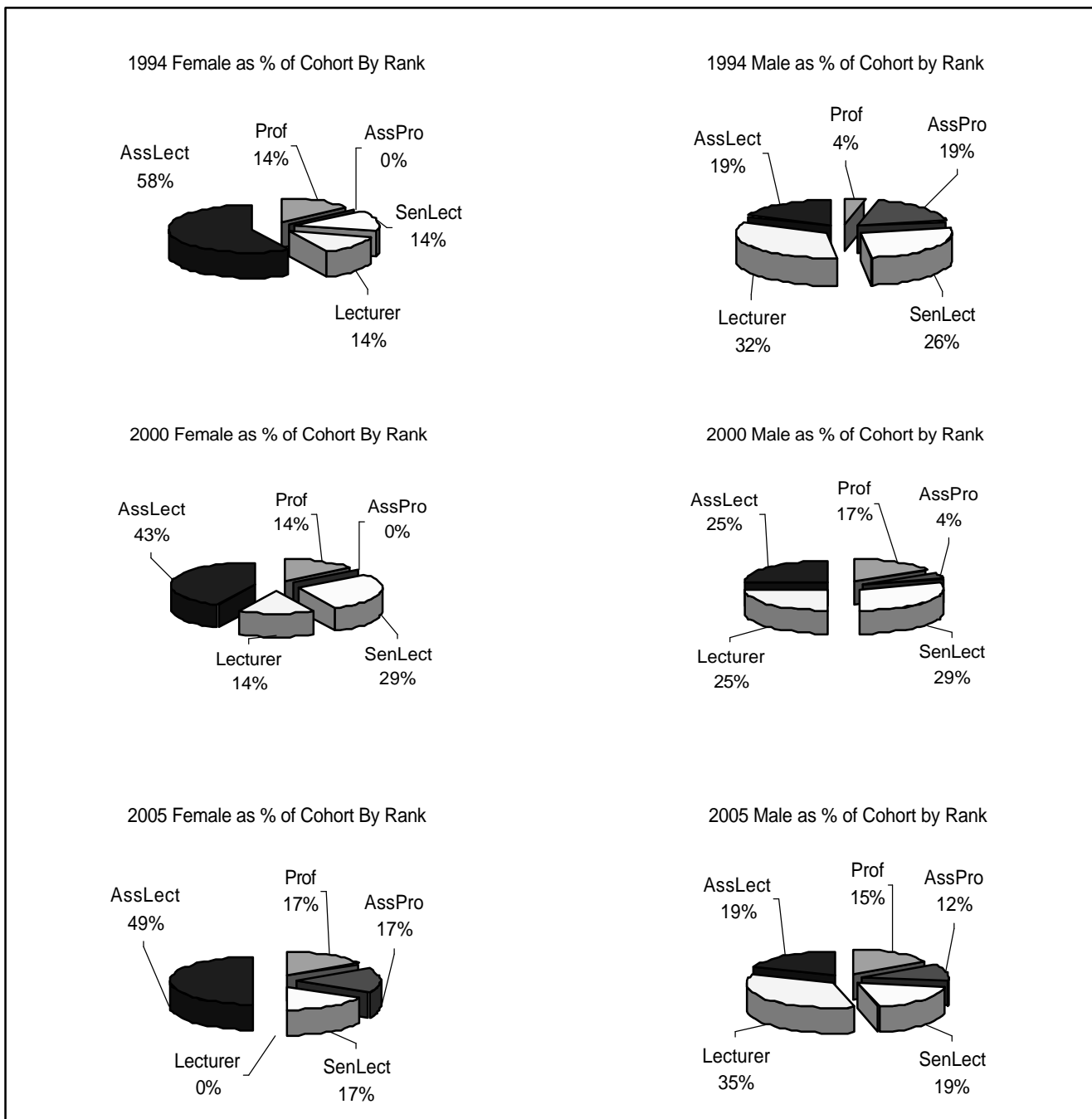


Source: AMIS

The lag effects hypothesis put forward by many researchers on gender inequality in economics in Australia and abroad (Mumford 2000; Hopkins 2004; Groenewegen 1998; Ingleton 1997; McDowell et al 2001; Burton 1997; Gibbons et al 2001; Dynan et al 1997) does seem to explain the low number of women entering academic staff positions in Economics at Macquarie. However, the pipeline effect, which is also posited in the literature as a reason for the slow advancement of female academics in economics, does not seem applicable to the Macquarie case.

The pipeline effect is proposed as an explanation for the low numbers of women in senior positions in economics departments. It suggests that the high proportion of women in junior positions is a temporary phenomenon reflecting a relatively recent increase in the proportion of women embarking upon careers as academic economists. An increase in the number of women in junior positions should be reflected in a rising proportion of more senior women as these newer staff flow through the promotion pipeline. A glance at Figure 4, comparing male and female staff by academic level from 1994 to 2005, tells us, however, that roughly the same proportions have been maintained for a decade – a decade during which the ‘pipeline’ hypothesis predicts that there should have been an increase in female representation at senior levels (Mumford 2000; Hopkins 2004; Groenewegen 1998).

Figure 4: Female and Male Staff Members by Academic Level (1994-2005)



Source: Macquarie University Handbook, 1994-2005

In 1994 academic staff in economics at Macquarie consisted of one female and one male professor, 0 female and 4 male associate professors, one female and 7 male senior lecturers, one female and 9 male lecturers, and 4 female and 5 male associate lecturers – a total of 7 females and 27 males . If the pipeline effect had existed at Macquarie, it should be expected that by 2000, there would be an increase in female representation in higher positions, especially at lecturer level, given the approximately equal numbers at associate lecturer level in 1994. However, we find that this is not the case.

Between 1994 and 2005 four men and no women had been promoted from associate lecturer to lecturer. Promotions from lecturer to senior lecturer over that period included five men and one woman. Two men and one woman were promoted from senior lecturer to associate professor and four men and no women were promoted from associate professor to professor.

The upward mobility of male staff and the lack of upward mobility of female staff are remarkable. In fact only one female member of staff was promoted (twice) during this period. A large part of the reason for this is no doubt that of the 13 new appointments made during the period, only 3 were women (one of whom has since left). However, another way of looking at the question is to observe the proportion of 'stationary' staff; that is, those who have remained at the same level during the whole decade. There were 9 of these staff members in total, 6 men and 3 women.⁷ Within the gender cohorts, 24 per cent of men were stationary, compared to 50 per cent of women.⁸ Moreover, of the 5 women listed at Level A in 1994 and 2000, three have since left and none has been promoted.⁹ By comparison, of the 8 men listed, only two have left and five have been promoted. For women, in Macquarie's economics department at least, the pipeline effect is non-existent. To investigate the reasons for this situation would need another study, looking, for example, at publication records and other factors affecting women's promotion opportunities. We have not attempted this here because our focus is on why women are not making it through the other 'pipeline', the one that feeds people from undergraduate economics to the academic qualifications necessary for an academic job.

2.3 Macquarie Students 1994-2003

The problem of diminishing student numbers in economics is by no means restricted to women. The proportion of students majoring in economics across the Division has declined steadily over the decade, as business and other majors have increased in popularity. Economists are concerned by this trend since '[i]f the decline persists we will see the continued diminution of economics within academe and the shrinkage of the once imperial discipline into slumbering irrelevance. We might also see economists displaced or, more likely, reincarnated as business academics.... While the

⁷ Two professors have been excluded from this group since they have no possibility for further promotion.

⁸ The data in the Macquarie University Handbook, from which these percentages are calculated, are out of date. One of the 'stagnant' males was recently promoted, reducing the percentage of stagnant males from 24% to 20%.

⁹ At least one other, who is not listed in either of these two years, has been appointed at another university.

problem became apparent in the Anglophone countries in the nineties, the latest evidence from an American authority... [shows that] the problem has been overturned' (Millmow 2002: 61-2). In 1996-97, Siegfried (2000: 299) found that in the US, undergraduate economics enrolments had hit their nadir. In the following year, there was even an increase in American women enrolling in economics as a proportion of total female majors.

In Australia, falling enrolments in economics first raised alarms in mid-nineties. In 1996, the Economics Society of Australia found that between 1991 and 1996, there was a fall in enrolments in undergraduate economics of 12% and a 40% increase in business degree enrolments during the same period (Millmow 2002: 61). Millmow cites Kim Jackson (Vice President of the Economics and Business Educators Association of NSW), that among Year 12 students in NSW, the decline in 1999-2000 alone, of students who took economics was 1.7 per cent (from 5,900 to 5,800), while almost three times as many students took business studies. Moreover, not all of these students take up economics at university (Millmow 2002: 62). Many economists had hoped that the trend in Australian enrolments would follow the US eventually. Phillip Lewis (president of the Economics Society) argued that there is a huge shortage of economists in Australia, and that shortages in supply will 'switch' the market back in favour of economics degrees. However, DETYA 2001 data showed no such turnaround happening (Millmow 2002: 63).

Our research at Macquarie has found that fewer students are graduating with economics degrees. They have instead been heading for economics' younger cousins – finance, business studies and accounting – which are deemed to provide better job prospects as well as a more secure road to financial reward in the future. As we saw in Figure 1, there has been a substantial drop in the number of students graduating with a Bachelor of Economics from Macquarie over the past decade. The numbers graduating each year steadily declined from 1994 to 2003, except for a slight, but temporary, recovery in 1997. A bleak future for the economics discipline, and possibly for the Department, is suggested by this picture. While this situation is true for both male and female graduates, it can be seen that in several years the decline in female numbers has been sharper than for males (Table 2a). At the same time there appears to have been a stabilization of new enrolments in the BEc from 2001 onwards (Table 2b), even though the year-to-year fluctuations are large.

Table 2a: Females as a share of total BEc graduates 1994-2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total	399	261	212	229	190	160	98	65	46	20
Female	163	95	82	92	67	71	38	18	15	9
Male	236	166	130	137	123	89	60	47	31	11
<i>Female %</i>	<i>40.9</i>	<i>36.4</i>	<i>38.7</i>	<i>40.2</i>	<i>35.3</i>	<i>44.4</i>	<i>38.8</i>	<i>27.7</i>	<i>32.6</i>	<i>45.0</i>

Note: Refers to year of actual completion, rather than year of award.

Table 2b: Females as a share of BEc admittances 1996-2004

	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total	200	136	87	59	29	73	37	21	40
Female	88	54	30	25	7	20	15	9	14
Male	112	82	57	34	22	53	22	12	26
<i>Female %</i>	<i>44.0</i>	<i>39.7</i>	<i>34.5</i>	<i>42.4</i>	<i>24.1</i>	<i>27.4</i>	<i>40.5</i>	<i>42.9</i>	<i>35.0</i>

Note: In 1996 the new BCom degree came on stream. This resulted in a huge drop in the numbers in enrolled in the BEc, from 930 in 1995 to 200 in 1996. We assume, but have not been able to determine, that some of the BCom students continue to major in economics.

Source: AMIS

The proportion of women enrolling in the BEc has also risen as the rate of decline in total numbers has slowed. Intuitively, this might suggest that women lack independence in their decision making to a greater extent than men. They appear to be early in deserting a sinking ship, but are prepared to return when others do.

Economics is, moreover, losing the best students to other disciplines, particularly women students. The average GPA for the core economics subject, shown in Table 3, is lower than those for core subjects in accounting, applied finance and actuarial studies. (Since the BBA does not have any core 300-level subjects – students study a range of optional modules instead – we do not have figures for that discipline.) In the core economics subject women have a lower average GPA than men, but the situation is reversed in the more popular degrees of accounting and applied finance. One factor accounting for this might be that students wishing to move from economics to more popular degrees are prevented from doing so by failure to achieve the necessary GPA. As we found in our survey of 300-level economics students, this effect is actually offset by students switching to economics because they found it more interesting.

Table 3: Average GPAs of students in core third year subjects in Economics, Accounting, Applied Finance and Actuarial Studies

	Total	Female	Male
ECON 311	1.941	1.824	1.984
ACCG353	1.978	2.013	1.932
FIN310	2.650	2.680	2.630
ACST300	2.946	2.902	2.969

Source: AMIS

Of the students who were admitted to the BEc between 1994 and 2000, an average of only 43 per cent completed their degrees. The remaining students were either re-parented to other disciplines within Macquarie, withdrew completely or were classified as 'AWOL'.¹⁰ The increasing number of students who dropped out of economics between 2001 and 2004 is astounding. In particular, 2001 saw 58 per cent (or 42 students) classified as AWOL, withdrawn or re-parented, leaving 22 per cent who have actually completed their degrees, with the remaining 20 per cent still to complete.¹¹ Among students admitted in 2004, 23 per cent (9 out of 40 admitted students) have already been re-parented.

While the drop in numbers enrolling in the BEc indicates that economics has become a vehicle for students who intend to take up other majors within the Division, information regarding students who were re-parented, withdrawn or AWOL between 1994 and 2004, demonstrates that even among those who initially opt for an economics degree, the drop-out rate is alarmingly high. The proportion of female economics students who were re-parented in 2003 is exceptionally high (more than 50 per cent of all females admitted to the BEc).

For women who have decided to carry through with their study, however, the level of commitment vis-à-vis male students is quite high. Table 4, comparing data on enrolments and graduations, reveals that the proportion of women who graduate on time (i.e. within 3 years) with a BEc is fairly consistently higher than that of men. Millmow (2002: 66) also found that Australian women who stick with economics tend to be more committed.

¹⁰ 'AWOL' means that, while they are still in the database, they have not re-enrolled for further study.

¹¹ The data were updated on 1 July, 2005. Those who were classified as 'admitted' and whose status is unchanged are considered to be continuing their degree.

Table 4: Students enrolling and graduating with BEc

	1997	1999	1998	2000	1999	2001	2000	2002	2001	2003
	enrolled	graduated	enrolled	graduated	enrolled	graduated	enrolled	graduated	enrolled	graduated
Total	136	160	87	98	59	65	29	46	73	20
Female	54	71	30	38	25	18	7	15	20	9
Male	82	89	57	60	34	47	22	31	53	11
<i>Female %</i>	39.7	44.4	34.5	38.8	42.4	27.7	24.1	32.6	27.4	45.0

Source: as for Tables 2a and 2b above.

Gender composition of students graduating from honours and postgraduate degrees from 1994 to 2003 (Figures 2 and 3), shows a similar pattern of imbalance. Numbers graduating from these programs have not, however, shown the same tendency to decline over time: instead they have shown large fluctuations. A closer examination of the masters program reveals two different trends: one, which includes both international and local students (Table 5a), resembles the trend of the honours and PhD programs, but the other, which excludes international students (Table 5b), follows the same declining tendency as the undergraduate program. Nevertheless, the proportion of women in both groups has remained relatively flat, while there are large yearly fluctuations in the international male cohort. The masters program seems to be more popular for local women, than either the honours or doctoral programs. As noted above, only 24 per cent of honours graduates and 20 per cent of PhDs during the decade were women. By contrast, the percentage of women masters graduates was 28 per cent of all graduates and 31 per cent of local graduates.

Table 5a: All MEc graduates 1994-2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total	78	56	33	19	54	14	52	26	20	66
Female	24	18	6	6	12	10	11	9	6	16
Male	54	38	27	13	42	4	41	17	14	50
<i>Female %</i>	31%	32%	18%	32%	22%	71%	21%	35%	30%	24%

Table 5b: Domestic MEc graduates 1994-2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total	56	51	54	15	23	8	10	13	13	12
Female	17	15	19	5	9	4	0	3	4	4
Male	39	36	35	10	14	4	10	10	9	8
<i>Female %</i>	30%	29%	35%	33%	39%	50%	0%	23%	31%	33%

Source: Amis

This decline in the popularity of economics is by no means a gender issue: the number of all economics students is shrinking. What is of concern, however, is that the proportion of female

economics graduates is so low compared to that of males. For those who are concerned with the long-term survival of the discipline, a number of key questions arise:

- i. the reason for economics' decline in popularity;
- ii. why women are even less interested in being economists;
- iii. why female high school students are heading for finance, business or accounting;
- iv. why, despite their greater dedication to study, so few female economics graduates proceed to academia;
- v. why there are proportionately more men in senior positions in economic departments;
- vi. are female economics academics less 'focused' on their job due to thin spread of their time to cover family and work?

We have attempted to address these questions in our survey of staff and students in the Economics Department.

3. Surveys and Results

Our surveys were conducted to test the degree of validity of the claims mentioned in the previous section, as they apply to Macquarie's economics department.

3.1 Staff Survey

To test the mentoring effect and the possibility of gender bias among staff we conducted a short survey of economics staff. This survey was conducted during mid-term of the second semester 2004, in order to determine how well staff members knew the better performing economics students. There were five questions. First, we aimed to ascertain (a) name recognition (which might be gained from marking students' work) and (b) the extent to which staff have become personally acquainted with these students. Staff were then asked whether they thought the students had (a) honours potential and (b) PhD potential and, if they replied 'yes' to one of these, whether they had ever discussed it with the student concerned.

The aim of the survey was to determine whether there were any discrepancies in knowledge of students between high performing male and female students. A secondary objective was to understand the difficulties in getting to know students, especially the good ones, in a large-class environment. Where staff are exposed to students in large numbers and for short periods only, the difficulty of mentoring high quality students, that is, encouraging them to undertake honours or to develop academic ambitions, is magnified.

Thirty-one staff members who participated in the survey were given no more than 1 hour to complete the questionnaire.¹² A list of 48 300-level students with GPAs of 2.2 and above was supplied (an average of 2.5, with a 3.0 average at 300-level, is the entry requirement for honours).¹³ Of these, 12 (25%) were women and 36 (75%) were men. These ratios do not differ from the proportions of men and women at 300-level as a whole (73% and 27% respectively). For the purpose of analysis, the 48 students were divided into four categories:

- A GPA >3.5
- B GPA 3.0-3.499
- C GPA 2.5-2.999
- D GPA 2.2-2.499

Characteristics of the students are shown in Table 6. Apart from Group A, where there was a preponderance of males, the proportion of male and female students in each category was approximately equal. Average GPAs of the women were slightly higher across the entire sample.

Table 6: Male-female ratio with above-average GPAs

Groups	Total no.	Average GPA	Female no.	% of Females	Average Female GPA	Male no.	% of Males	Average Male GPA
A	6	3.723	1	8	3.800	5	14	3.749
B	12	3.214	3	25	3.295	9	25	3.187
C	15	2.728	4	33	2.889	11	31	2.670
D	15	2.329	4	33	2.360	11	31	2.318
Total	48	2.849	12	100	2.890	36	100	2.836

Before we discuss the results of the survey, some data issues need to be mentioned. First, many international students, especially those of ethnic Chinese origin, use an English pseudonym in class. This practice makes name recognition difficult since the list of students was taken from student records that contain only the students' official names. Second, some staff also pointed out that visual recognition is easier than name recognition. Thus staff might actually have spoken to students with whose names they are not familiar. Third, some staff thought that female students might be more likely, on account of culture or personality, to be shy compared to their male colleagues in approaching teachers (whether male or female lecturers or tutors). This perception

¹² The time limit was intended to ensure authenticity of knowledge of students and prevent checking of class lists.

¹³ The average GPA for students taking ECON311 in 2004 was 1.941 (women 1.824, men 1.984).

was not, however, borne out by the results. Fourth, the less able students may be better known to staff members if they make more use of consultation times to sort out their problems with lecture and course material. Some staff indicated that they are more likely to know the very top and the poor students rather than the merely above-average. Again, however, this perception did not show up in the results. We could find no differences in recognition between Group A and B students and those lower down the scale. Moreover, about half the A and B group were nominated as having honours potential and also half of the C and D group (true of both men and women).

Based on the units these students had taken, the maximum possible number of staff who could recognize them was, on average, 21.5. The actual number would be somewhat lower since not all staff teaching a unit, especially in the case of large classes, would have come into contact with a given student. In our survey of 300-level students (see below) we found that both male and female students said that, on average, they had been taught by 14 different people. Name recognition by staff was therefore rather low: on average, these high performing students were recognized by 4 different staff members (range 0-9). The average for female students was slightly higher, at 4.9 staff. Personal contact with students was considerably lower: the average was only 1.5 staff members who could say they had had a chance to get to know a student in person (range 0-5). In this case, the female figure is only marginally higher at 1.6 staff. Only one student was not recognized by anybody.

Twenty-three students were recognized as having honours potential, by an average of 1.8 staff members. The remaining 25 were not recognized, although 17 of these fell into the required GPA range (2.5 and above) and 9 had GPAs of 3.0 or more. Of the recognized students, 8 were women who were recognized by an average of 1.5 staff members. Proportionally then, high performing women students were more likely to be recognized as such – only 16 per cent of the women were not recognized compared with 58 per cent of the men. However, those men who were recognized were likely to be nominated by more staff members (1.9 on average).

A total of 13 students were nominated as having PhD potential by an average of 1.5 staff members, including 8 males and 5 females. Again the proportion of females recognized in this way is higher than for males. However, no woman was nominated by more than one staff member, while the men were nominated by an average of 1.8 people. All of those recognized as potential PhD candidates had also been nominated as potential honours candidates.

Of the 23 students who had been recognized as having either honours or PhD potential, only 8 had actually discussed it with a staff member. This group included 3 women and 5 men. While only one staff member had spoken to most of them, two of the men had discussed the issue with more than one staff member.

Table 7 shows the average number of students recognized by individual staff members, with corresponding percentages of cohort. The average number of students recognized by name was 6.7 (or 14 per cent); but only an average of 2.5 students (5 per cent) were known to staff personally. Staff members knew an average of 2.1 women students (18 per cent) by name and 0.7 (6 per cent) personally. While staff recognition of honours potential among female students (4 per cent) was slightly higher than that of the population sample (3 per cent), there was no discrepancy between males and females in recognition of students' potential at PhD level or in encouragement of students to pursue higher studies.

However, when we looked at female staff alone, we found a different picture. While female staff members were more likely to recognize students than were other staff (columns 2 and 6), this meant that they were also more likely to recognize female students (columns 4 and 8). At the same time, they were neither more nor less encouraging of females than of other students. This result is quite important, given the shortage of women proceeding to higher studies in economics. On the one hand, high quality women students are more dependent on female staff members to recognize their potential, but on the other hand, there appears to be little specific encouragement given to them by this group within the Department.

Table 7: Staff recognition statistics (average no. of students)

	All staff of all students	% of cohort	All staff of female students	% of cohort	Female staff of all students	% of cohort	Female staff of female students	% of cohort
By Name	6.7	14%	2.1	18%	12.3	26%	3.8	31%
In Person	2.5	5%	0.7	6%	4	8%	1	8%
Honours Potential	1.6	3%	0.4	4%	4	8%	1	8%
PhD Potential	0.8	2%	0.2	2%	2.3	5%	0.5	4%
Encouragement	0.4	1%	0.1	1%	0.8	2%	0.3	2%

One of the strongest findings from this survey is that staff members evince relatively low levels of recognition of the high performing students. This result is, of course, qualified by the recognition issues noted above, but it probably also reflects the large class sizes in economics which make it

impossible for staff to get to know students during the course of the few weeks that they might be teaching them. Students are more likely to become known in person if they initiate contact, for consultation purposes for example. Among the above-average students, we found no indication in our results that the supposed relative shyness of women is an impediment. While cultural or personality traits may be a factor in seeking help and encouragement for women who are performing poorly, this problem (if it is one) lies outside the scope of our study. Some improvements in name recognition might come if everyone adopted the practice of writing to congratulate the top students in their class after each semester, but it seems doubtful, given the large size of classes, that staff members' ability to link names with faces and to get to know individual students can be much enhanced.

It is clear also that staff do not exhibit any discrimination against female students. If anything, good female students are more likely to be noticed – perhaps because their numbers are so few. To be noticed, however, it seems that all good students rely more heavily on female staff members. In general, staff, especially men, could show greater initiative in encouraging the high quality students with whom they do have contact to undertake further studies in economics. From a gender perspective, however, it would appear to be the low numbers of women majoring in economics that accounts for their low proportion in honours and higher degree research rather than lack of encouragement by academic staff.

3.2 Student Surveys

Given that we found no discrimination against good women students by academic staff, we now turn to the results of the student surveys in order to determine what factors lie behind the low representation of women in the Economics Department. We have already seen that women are enrolling in and graduating from economics at a far lower rate than men. The aim of the student surveys was to examine the reasons for this phenomenon by tracking, first, students' decisions about which discipline they will major in, second, their experience of studying economics and, third, their ambitions in relation to their post-graduation career. In order to achieve this goal we carried out two surveys, of students enrolled at 100-level and at 300-level.

We attempted to survey all students enrolled in ECON111, a core introductory course, and in ECON311, a core third-year course. Both are required units for an economics major. For practical reasons, the surveys were administered in lecture times which reduced the number of possible respondents to those attending that lecture. Moreover, since student participation was on a voluntary

basis, the number was further reduced. The surveys were administered in mid-semester. In the case of ECON111, we attended one lecture in each of the four series – 3 day-time and one evening stream. For ECON311, there was only one day and one evening lecture, both of which were included. The numbers enrolled in the two units and those responding to the survey are summarized in Table 8. Just over half the students enrolled in each unit responded. Women participated at a slightly higher rate than males, the difference being less marked in the case of ECON111 than for ECON311, where there was a large disparity between the numbers of each sex enrolled and those responding. In total, 709 questionnaires were returned, of which only 9 were deemed unusable. Nevertheless, since a major focus was on the reasons for women’s low representation, we were pleased with the large response from that group. A sufficient number of men responded in each case for comparisons to be useful, though the small number of female responses to the 300-level survey renders the results for that survey somewhat unreliable (discussed further below).

Table 8: Survey respondents & enrolled students in 2004

Course	Total	% of enrolled students	Female	% Female	% of enrolled females	Male	% Male	% of enrolled males
ECON111								
respondents	632	55.8	339	53.6	57.8	293	46.4	53.7
enrolled	1133		587	51.8		546	48.2	
ECON311								
respondents	68	51.9	22	32.4	62.9	46	67.6	47.9
enrolled	131		35	26.7		96	73.3	

The questionnaires differed between the two units. The 100-level questionnaire was short, only one page, focusing on the student’s study major, preferred occupation, expectations with regard to marriage and children, and important career goals. The 300-level survey comprised a four page questionnaire covering the same questions as the 100-level survey, as well as additional questions about career choice, experience of studying economics, signs of mentoring, their view of an academic career, and plans for continued study. Comparison of the two surveys, for the purpose of tracking changes, relies heavily on the assumption that students at both levels shared similar views at the outset of their degree.

The purpose of the 100-level survey was to find the proportion of students interested in reading economics from the beginning of their university studies. From the 300-level survey we hoped to learn to what extent these early interests changed during the course of their degree. We were interested in whether there is a gendered pattern of responses in relation to discipline preferences

and to what extent (and why) these have been modified over time. One question of importance is whether the decision to study economics (or not) was conceived pre-university – that is, the main influence was external to the university. We were also interested in whether gender is perceived as an obstacle to the pursuit of a successful career and whether this particularly affects women economists. At 300-level we wanted to find the extent to which perceptions of a career in either economics or economic academia were shaped by the undergraduate experience or remained consistent with those of the first year students. A substantial part of our 300-level survey was concerned with students’ opinions about what a major in economics can achieve for them, and what advantages and disadvantages they envisaged in pursuing an academic career in economics. Our assumption here is that those who take ECON311 will complete a major in economics.

The results of the ECON111 survey show that only 35 women, or 10 per cent, were intending to major in economics, compared to 40 males (14 per cent). Approximately 85 per cent of women and 80 per cent of men were enrolled in the Bachelor of Commerce. The situation has apparently not changed much since 1996, when the BCom was introduced as a separate degree program at Macquarie and the number of students enrolling in the BEc took an almost 80 per cent dive (from 930 the previous year, to 200). Many students enrolling in the BCom (Economics) were initially compelled to do so by the fact that their UAI was not high enough for other disciplines. Some of these may be forced to stay in economics throughout their studies.

Sixty-five per cent of men and 57 per cent of women described themselves as ambitious. The final question for students at this level examined differences in career goals between males and females doing first year economics (Table 9). The most popular responses were in favour of ‘money’ and ‘ability to balance work and family life’, with ‘money’ being more popular amongst men (29 per cent) followed by ‘balance’ (27 per cent). Women favoured ‘balance’ (31 per cent) over ‘money’ (25 per cent). Men also favoured ‘power and/or recognition’ (14 per cent), while women preferred ‘meeting a challenge’ (16 per cent). While men exhibited a little more ambition than women, the differences in career goals for men and women studying 100-level economics appear not very great.

Table 9: First year students’ career goals

Career goal	Males		Females	
	no.	%	no.	%
money	147	29	154	25
ability to balance work and family life	136	27	188	31
contributing to society	50	10	47	8
travel	44	9	63	10

meeting a challenge	60	12	94	16
power and/or recognition	70	14	60	10
others	19	0.4	13	0.2
total	526	101	619	100

Note: Numbers add to more than the total number of respondents, due to multiple answers. Percentages add to more than 100 due to rounding.

When asked whether these ambitions included partners/marriage and children, the responses were surprisingly similar. Thirty-five per cent of male respondents and 36 per cent of females thought that their present or future partner would influence their choice of career, while 84 per cent of men and 81 per cent of women planned to have children. Differences appeared, however, in relation to willingness and ability to continue with full-time work after the children arrive. Among the men, 9 per cent said they would like to give up work when their first child arrives and 15 per cent thought they might have to do so. The responses for women were 24 per cent and 46 per cent respectively. Ten men and 19 women who already had children had given up full-time work (of a total of 138 respondents with children): these comprised 13 and 33 per cent respectively of the men and women whose first child had already arrived. Women's career prospects are perceived by ECON111 students to be more compromised by the birth of children. Whereas the desire to have family and children appears to be fairly equally present between both sexes, the responsibility of career sacrifice (or perception thereof) still falls disproportionately on the women.

Furthermore, it appears that for majority of young women who considered themselves ambitious, their career goals lie outside economics. Only 11 per cent of those female students who considered themselves ambitious were majoring in economics, as opposed to 89 per cent who had other majors. The comparable figures for men were 17 per cent and 83 per cent. Ambitious students were therefore marginally more likely to choose economics than the rest of the sample. Among the group intending to major in economics 57 per cent of female and 78 per cent of male students viewed themselves as being ambitious, compared to 39 per cent of female and 52 per cent of male non-economics majors.

The 300-level survey showed greater differences between female and male responses compared with the 100-level survey. While just over half the total students enrolled in the course participated in the survey, there was a disappointingly low number of females (22) which means that it is difficult to read any significance into the results we obtained. The main cause of this problem is that relatively few women actually proceed to 300-level economics – in this case the numbers reflect a

particularly low share of women enrolling in the BEc in 3-4 years earlier. As we noted in the case of the 100-level survey, the vast majority of them are already destined for other disciplines and, while some may change their minds (see below), the numbers are very small. Nevertheless, we have proceeded to analyse the results and to draw some conclusions which, however, must remain very tentative for now.

As noted above, we have assumed that students enrolled in ECON311 are pursuing a major in economics, regardless of which degree, or degree combination, they have chosen. In fact the women in the group had completed an average of 10.8 subjects with an ECON prefix, while the men had completed 9.

This survey group was heavily skewed towards students with a higher GPA, as is shown in Table 10. While 38 per cent of the whole class had a GPA between 0 and 1.49, only 6 per cent of them participated in the survey. Low GPAs were particularly prevalent among women enrolled in this unit, reinforcing the finding of the 100-level survey that women are somewhat more likely to prefer non-economics majors, but they may have been compelled by their low GPA to stay in economics. Even among the higher performing group who responded to the survey, 19 per cent of women and 26 per cent of men said that their career expectations had changed due to their failure to obtain a sufficiently high GPA to transfer to another discipline. We also note that in the mid-upper range there was a tendency to inflate GPAs: only 15 people enrolled in the class have a GPA in the range 2.5-2.99, while 19 of the surveyed group reported a GPA in that range.

Table 10: Comparison of enrolled class and survey group by GPA (ECON311)

GPA	TOTAL		FEMALE		MALE	
	enrolled	survey	enrolled	survey	enrolled	survey
Total students	131	68	35	22	96	46
	<i>100%</i>	<i>100%</i>	<i>26.7%</i>	<i>32.4%</i>	<i>73.3%</i>	<i>67.6%</i>
No. responses to question		64		18		46
GPA 0 – 1.49	50	4	18	3	32	1
<i>% of cohort</i>	<i>38%</i>	<i>5.9%</i>	<i>51.4%</i>	<i>13.6%</i>	<i>33.3%</i>	<i>2.2%</i>
GPA 1.50 – 2.49	47	27	9	6	38	21
<i>% of cohort</i>	<i>36%</i>	<i>40%</i>	<i>26%</i>	<i>27.3%</i>	<i>40%</i>	<i>45.7%</i>
GPA 2.50 – 2.99	15	19	4	5	11	14
<i>% of cohort</i>	<i>11%</i>	<i>28%</i>	<i>11.4%</i>	<i>22.7%</i>	<i>11.5%</i>	<i>30.4%</i>
GPA 3.00 – 4.00	19	14	4	4	15	10
<i>% of cohort</i>	<i>15%</i>	<i>21%</i>	<i>11.4%</i>	<i>18.2%</i>	<i>15.6%</i>	<i>21.7%</i>

Within the survey group, 89 per cent of female students thought their GPA was average (47%) or low (42 %) compared to 41 per cent in reality. Male students, on the other hand, tended to consider their GPA more favourably: while 83 per cent considered their GPA average or low, they were less likely to consider it low (26%) and more likely to consider it average (57%). In reality, 47 per cent had a low or average GPA. At the other end of the scale, only 11 per cent of females and 17 per cent of males thought their GPA fell into the ‘high’ category, compared to the actual 41 and 52 per cent respectively. Therefore, while both men and women underestimated their scores, females tended to be more self-critical than males.

Among this group of 68 economics majors, of whom only 32 per cent were female, the degree of ambition among the women had risen a little. Sixty-two per cent of the women and 78 per cent of the men (the same number as in first year) considered themselves ambitious. As before, ‘money’ and ‘balancing work and family’ were the most popular career goals, although these had diminished in importance, largely at the expense of ‘money’, in favour of ‘contributing to society’, especially among women (Table 11). A difference in responses between the two surveys became particularly noticeable in the questions concerning marriage and partner-influence. For ECON311 students, 55 per cent of women and 33 per cent of men expected to enter into a permanent relationship or get married in the near future, while 24 per cent of women and 10 per cent of men believed that this decision had affected their career choice (in the 100-level survey there was no difference between male and female answers to the latter question).

Table 11: Third-year students’ career goals

Career goal	Female		Male	
	no.	%	no.	%
money	12	18	20	21
balance work and family life	18	27	23	24
contributing to society	13	20	14	15
travel	9	14	12	13
meeting a challenge	9	14	15	16
power	5	8	9	10
other	0	0	2	2
total	66	101	95	101

Note: Percentages do not add to 100 due to rounding.

The group of questions concerning the impact of children on careers showed that 73 per cent of women (and 65 per cent of men) were planning to have children (reversing the proportions in first year), while 36 per cent of women (17 per cent of men) would like to give up full-time work when

the first child arrives and 45 per cent of women thought that they would have to.¹⁴ One out of the five women who already had children had given up full-time work while none of the 16 men had done so.

An interesting result emerges for the question on career choice: 31.8 per cent of female students in our 300-level survey chose an economics career path, but only 26.1 per cent of male students. Among those who considered themselves ambitious, the difference was even greater: 33.3 per cent of ambitious women want to pursue a career as an economist, but only 15.9 per cent of ambitious men. This result suggests that women may consider economics a more ambitious career path than men.

The responses to our question on whether students had changed their career expectations as a result of studying economics were more encouraging. Overall, 62 per cent of women and 63 per cent of men had changed their career expectations as a result of their studies. As noted above, a portion of these had simply failed to gain the scores necessary to transfer to another discipline. However, a larger proportion (31 per cent of women and 38 per cent of men) had changed because they found economics more interesting than they had initially anticipated.

We asked a number of further questions relating to the experience of studying economics, relating to the teaching of the subject, the type of subjects that were more interesting to students and student attitudes to the discipline.

The questions relating to the teaching of economics tended to elicit rather similar responses from both men and women. Students estimated that they had, on average, been exposed to 14 different staff from the Economics Department, of whom 3 were women (unsurprisingly, approximately the same proportion of males to females on staff). Sixty per cent of women and 68 per cent of men said that they had found at least one staff member particularly encouraging to them personally, while the average number of encouraging staff members was 2.7 for women and 3 for men. Among women staff members who were encouraging, the average number for female students was 0.5 and the average for men was 1. The implication of this result, which is interesting to compare with the perception of women staff that they are gender neutral, is that female staff members may be less

¹⁴ The response of men to this question was interesting, to say the least: 88 per cent apparently thought they would have to give up full time work when their first child arrived. In view of the more probable reality, we choose to attribute this response to a collectively warped sense of humour.

encouraging of women students than male staff.

Questions concerning students' favoured aspects of economics showed both interesting differences and similarities (Table 12). The most commonly favoured aspect among both men and women was the 'institutional/political' one. Economic theory was also favoured, being slightly more preferred by men. These results do, however, suggest that there is no gendered bias for or against 'mathecon' (as was suggested by Hughes 1998: 8). Among women, however, there was a marked preference for econometrics compared to men and they were also more likely to favour the history of economic thought than men were. Since the latter is not a core subject (except for honours students), the result may be biased according to whether students have taken it or not. Men demonstrated a greater preference for 'money/finance' than women and were also more likely to select 'applied economics'.

Table 12: Most favoured aspects of the discipline

	% female responses	% male responses
Theory	16	19
Econometrics	25	10
History of Thought	16	10
Institutional/political	25	24
Applied Economics	9	16
Money/Finance	9	21

We asked students to nominate their favourite and most disliked subjects. As a wide range of subjects were nominated on both sides, we have grouped them under broad categories in Table 13. The responses showed some marked gender differences that we cannot explain. Core subjects produced the greatest polarization of opinion, which is to be expected since they are compulsory. But the differences are curious. For example, while men and women liked and disliked microeconomics in roughly equal proportions, women showed a much greater indisposition towards macroeconomics, while men tended to favour it more. Conversely, men tended to dislike econometrics. Interestingly, while women in answering the previous question tended to like econometrics in general, this does not show so strongly in their favoured subject responses. Their most frequently chosen subjects were ECON309 Industrial Organisation, ECON200 Microeconomic Analysis, ECON350 Money and Finance and ECON349 Southeast Asian Economies. For men the most frequently chosen subjects were likewise ECON309, ECON200 and ECON350, but they also chose ECON201 Macroeconomic Analysis. The most disliked subjects of the women were ECON201 and ECON210 Public Economics. Men disliked ECON 309, ECON232

Econometric Principles and ECON 210. While it is hardly surprising that the most disliked subjects tended to be core compulsory subjects, what is interesting is that for both men and women core theoretical subjects were also their most frequent favourites. The results lend credence to the view that there is nothing inherently off-putting to women in economics.

Table 13: Subjects most liked and disliked

	Females				Males			
	most like		most dislike		most like		most dislike	
	no.	%	no.	%	no.	%	no.	%
Core macroeconomics	2	7.8	8	40.0	11	22.4	5	10.6
Core microeconomics	9	34.6	10	50.0	15	30.6	19	40.4
Econometrics	4	15.4	2	10.0	3	6.1	13	27.7
Development/Asia	5	19.2	-	-	6	12.2	1	2.1
Money and finance	4	15.4	-	-	7	14.3	-	-
Others	2	7.8	-	-	4	8.2	2	4.3
None	-	-	-	-	2	4.1	3	6.4
Too many	-	-	-	-	1	2.0	4	8.5
	26	100.2	20	100.0	49	99.9	47	100.0

Note: some students nominated more than one subject. Percentages do not add to 100 due to rounding.

The overall experience of studying economics also produced some differences between men and women, as summarized in Table 14. Women were more likely than men to have mixed reactions or to find the subject difficult, while men were more likely to be polarized, finding it either enjoyable or dull. Men were also somewhat more likely to find the subject inspiring. The differences here may be related to confidence (which is suggested by the tendency of women to be more self-critical – see p. 24).

Table 14: Experience of studying economics by gender

Overall experience of studying economics	% female responses	% male responses
Enjoyable	8	16
Difficult	38	29
Dull	4	14
Inspiring	13	18
Mixed	38	23

With regard to their intentions concerning further study in economics, the disparity between men and women widens. Only 3 of 21 women (14 per cent) who answered the question were intending to take 4th year honours, compared with 10 out of 44 men (23 per cent). Among those who did not intend to do honours, the reasons were fairly similar. Most thought it was not relevant to their career

plans (44 per cent of men and 41 per cent of women). The remainder thought that either their GPA was not high enough (32 per cent of men and 29 per cent of women), and/or did not feel confident about doing honours (21 per cent of men and 24 per cent of women). Two people (1 of each sex) had never heard of the honours degree.

A larger percentage of women (24 per cent) had considered doing a PhD, compared to 30 per cent of men. Only 2 of the 5 women and 5 of the 11 men in this group, however, intended to do honours. Conversely 6 of the 10 men intending to do honours were also considering a PhD, as were 2 of the 3 women. This result indicates that the honours degree as a path to the PhD is very unevenly understood among 300-level students in economics. Responses given by those not considering doing a PhD were very similar to those for the honours question.

A surprising difference between the men and women in this survey is that women responded much more positively to the idea of considering an academic career in economics - 33 per cent had considered this, as opposed to only 13 per cent of men. For those who responded negatively to this question, a majority of women and men were not interested in either or both of teaching and research (30 per cent for women and 26 per cent for men). The second highest proportion (23 per cent of women and 15 per cent of men) considered economics to be too theoretical and/or mathematical. Since 43 per cent of the women and 31 per cent of the men who gave this response had previously said that they enjoyed the theoretical aspects of economics, this answer is likely to reflect a desire of both men and women to apply their theory in a more practical sphere. The third most chosen reason for women is that they are not confident in their ability (20 per cent). For men, this was a less important reason: they ranked the long-term commitment to study and low salary as more important. Does this then show that the career goals and aspirations of men and women are similar, but women are plagued with different gender expectations?

The other interesting response is from those who considered an academic career as being attractive (Table 15). Six women and 16 men who indicated that they had not considered an academic career also answered this question, so for analytical purposes we divided them into two groups. Many respondents gave more than one reason. The top two reasons given by both women and men were that it is a prestigious occupation and it has flexible hours and the ability to work from home. However, this result was skewed by men who had not considered an academic career. While these two reasons remained popular for women who had considered such a career, they were equally attracted by the prospect of getting into research, a love of economic theory and the relative

freedom and security of academic employment. Among men, when those who have not actually considered an academic career are excluded, the main reasons given were their interest in research and economic theory followed by flexible hours and teaching. Prestige was relatively unimportant. Thus both men and women shared similar perceptions of an academic career, although women who have actually considered one were also more likely to value prestige as well as freedom and security of employment, while men were more interested in teaching. As previously noted, however, the numbers are very small and these results can only be taken as suggestive.

Table 15: Reasons an academic career would be attractive

	Females						Males					
	Considered		Not Considered		Total		Considered		Not Considered		Total	
	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%
Love teaching	1	5	2	20	3	10	3	16	6	15	9	16
Keen to get into research	4	20	-	-	4	14	4	21	1	3	5	9
Love economic theory	3	15	1	10	4	14	4	21	5	13	9	16
Prestigious occupation	3	15	3	30	6	21	2	11	8	20	10	18
Easier to get child care	-	-	1	10	1	3	-	-	1	3	1	2
Hours are flexible, can work from home a lot	3	15	2	20	5	17	3	16	9	23	12	21
Relative freedom, security of employment	3	15	1	10	4	14	2	11	7	18	9	16
Universities offer more equality for women	2	10	-	-	2	7	-	-	1	3	1	2
Other	1	5	-	-	0	0	1	5	1	3	-	-
Total	20	100	10	100	29	100	19	101	39	101	56	100

4. Conclusion

The demand for economics as a study major has reached catastrophically low levels. As we have known for some years now, the Economics Department has become essentially a service department for students requiring some economics background for their degrees in accounting, applied finance and business. Students entering the Division of Economic and Financial Studies for the first time have their sights clearly set on a degree in these other disciplines and only about 10 per cent enrol in the BEc, in a BCom with economics major, or in a double degree with one of these. The drop in women's participation in economics studies has been even more dramatic than that of men, although when total numbers rise, their share also rises. However, economics is less able than other disciplines to retain high quality female students, as was shown in the data on average GPAs in core 300-level subjects (Table 3).

The relatively low numbers of women studying economics is reflected, through the ‘lag effect’, in low numbers of women applying for jobs in the Department.¹⁵ We also note, however, that upward mobility for those women who have been appointed is almost non-existent, compared with the mobility of men. Women appointed at Level A, show a greater tendency to leave while men show a higher tendency to be promoted. The ‘pipeline effect’ is, therefore, not functioning.

Our study attempted to answer some of the questions raised by this situation through examining aspirations and expectations of the student body as well as their experiences of studying economics at Macquarie. Our results point strongly to the importance of factors external to the university in forming student decisions about which degree and major to study. These, we surmise, are related to student perceptions of the ‘marketability’ of an economics degree rather than any intrinsic characteristic of the discipline. The lower expectations of women in the wider community, and consciousness among female students of the need to go for ‘safer’ career options in light of probable family obligations, may also be factors that are to some extent supported by the student surveys.

In our survey of staff members we found nothing to indicate that women students are the victims of discrimination (conscious or unconscious). If anything can be done by staff to improve the situation, our results suggest that a more conscious effort might be made, particularly by men, to get to know students personally and even to exercise some positive discrimination in favour of female students. Under current circumstances, such a course is difficult, particularly at 100-level where the effects might be most beneficial. It is interesting, though the result is unreliable, that female students in the 300-level survey reported less encouragement from women staff.

At 100-level a majority of both males and females considered themselves ambitious, though women were less so. The content of their ambitions differed insofar as men were slightly more money-oriented and women were marginally more likely to want to balance work and family life or meet new challenges. Contributing to society rated low in the career goals of both sexes. A huge majority did not intend to pursue a career in economics.

¹⁵ This is, admittedly, a proxy effect since we are not certain that the situation in other economics departments is the same.

The survey of 300-level students, by contrast, focused on students who had decided upon an economics major. It showed no significant differences between men and women with regard to their appreciation of the more theoretical aspects of economics. It is time, therefore, to put to rest the oft-cited bogey (most recently associated with the President of Harvard University) that women simply don't have the ability for mathematically oriented subjects.

Once they decided upon economics, the experiences of men and women did tend to differ. While both men and women liked the theory and institutional/political aspects of the subject, there was a marked difference in liking for econometrics (women) and for applied economics and money and finance (men). These preferences were not wholly reflected in subject likes and dislikes – but neither sex showed any particular aversion to the core curriculum, except that men disliked econometrics and women disliked macroeconomics. Women tended to find the subject more difficult than men, and to have more mixed reactions, but as noted above, this response may be due to their lower degree of confidence or greater propensity for self-criticism. Whereas a significant proportion of both male and female students had remained in economics due to low GPAs, this phenomenon was offset by the group who had stayed because they found economics more interesting than they had expected.

The aspirations of men and women at 300-level differed very little. If anything, they were closer than the 100-level group. The level of ambition among those actually majoring in economics was higher for women than among first year students intending to do so, but no different for men. Our results did suggest a slight bias among third year women towards using economics for the social good (Table 11), although this was a change in attitude observable in both men and women. The only surprising result, given the low numbers of women academic staff in economics across the country, was that more women seemed to be interested in an academic career than men. They valued it for its prestige (which is perhaps something that men do not perceive) and were more likely to value the relative freedom and security of employment, but shared with men an interest in economic theory, research and flexible hours (Table 15).

Our results suggest that there are relatively few ways in which the Department can influence students to choose economics over other disciplines. Perhaps the mooted turnaround will take place as the shortage of economists is reflected in the market. Otherwise, there are some opportunities to influence students at the margin – by making greater efforts to get to know them individually, by offering more encouragement, particularly to women, and by continuing to excite students with the

possibilities for using their skills in the practical sphere. In terms of improving gender equity in the staffing of economics departments, female students must be considered an important part of this effort.

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