The Position of Women In UK Academic Economics

Alison L Booth and Jonathan Burton

On behalf of the Royal Economic Society Committee on Women in Economics

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Institute for Social and Economic Research
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Working Papers of the
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The Royal Economic Society Committee on Women in Economics

The Council of the Royal Economic Society agreed in November 1996 to establish a new Committee on Women in Economics, to promote the role of women in the UK economics profession. The 1998 survey, the results of which are reported in this paper, was financed by a grant from the Royal Economic Society to the Women's Committee, and is the second survey of the gender balance in UK academic economics. The Women's Committee commissioned the Institute for Social and Economic Research at the University of Essex to carry out the 1998 survey on its behalf. The support of the Royal Economic Society, the Economic and Social Research Council, and the University of Essex, is gratefully acknowledged.

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I. INTRODUCTION

How male-dominated is UK academic economics in 1998? Has the gender composition altered since 1996, when the first survey on the gender balance in academic economics was conducted? Are more young women becoming lecturers, and are increasing numbers of women being promoted to higher positions? What is the proportion of female postgraduate students, and is it growing? This report attempts to answer some of these questions using the 1998 Royal Economic Society Survey on the Gender Balance of Academic Economics. We also explore how the 1998 gender composition varies across departments, in particular across the new and old universities, the top ranking and lower ranking research departments, and departments that submitted to the Economics and Econometrics panel at the last Research Assessment Exercise (RAE).

The principal stylised facts that emerge from our analysis are as follows:

Women make up 32% of research or PhD students, 17% of full-time permanent lecturers, 11% of readers and senior lecturers, and just 4% of professors. Since 1996 the proportions for lecturers and readers/senior lecturers have increased, whilst the proportion of professors has decreased slightly.

Men in standard full-time academic jobs are 1.75 as likely to be at a senior level (above lecturer) than women. The situation has improved slightly since 1996, when men were twice as likely to be at a senior level.

There are few part-time jobs in standard academia, and men hold just over two thirds of these.

While the inflow into lectureships has grown over the period 1996-8, it will take nearly 9 years for the relative stock of female permanent lecturers to equal the proportion (24%) of women in the inflows to that grade.

Research-only jobs make up 14% of all full-time academic jobs, and of these 70% are fixed-term. Research-only jobs are dominated by males, although to a lesser extent than occurs in standard full-time academic jobs.

Women hold just over half of the very few part-time research jobs, 21 out of 40 positions.

Men are 2.4 as likely as women to hold senior research positions. This proportion has increased since 1996, when men were twice as likely to hold senior research posts.

Men are twice as likely and women almost 3 times as likely to be at senior levels if they work in standard academic rather than research-only jobs.

There is no statistically significant difference between the relative positions of women in the different types of universities and the different RAE ranking of departments.

29% of research and PhD economics students are from the UK (27% of females and 30% of males). This is a slight decrease from 1996, when 30% of PhD students were from the UK (only 27% of female PhD students and 32% of males were from the UK).

Overall, the proportion of female PhD students has increased from 28% in 1996 to 32% in 1998. There has also been an increase in the proportion of female economics MSc students, from 31% in 1996 to 34% in 1998.

67% of economics PhD students are enrolled in departments rated 4 or above in the 1996 RAE (69% of male and 64% of female PhDs).

In summary, and in answer to our opening questions, UK academic economics remains male-dominated, although the gender composition has altered since 1996 in favour of a greater percentage of women at the more junior levels. While proportionately more women are becoming lecturers, the proportion at junior tenured level is still substantially below the proportion of female PhDs (both now and in the past).

What explains this low female representation in academic economics? Reasons for male domination of the discipline abound. They include supply-side factors (such as low levels of female interest in economics, the mathematical nature of the discipline, and the lack of role models or mentors), as well as demand side factors (such as discrimination in appointments, promotions and networking). Why should we care about the low proportion of female academic economists? Perhaps it simply reflects gender differences in individual *preferences* for field of study, in which case there may be no need for concern. One measure of preferences for the subject matter is provided by the proportion of students doing post-graduate economics. Our 1998 survey results indicate that almost one third of all postgraduate students in 1998 was female, as compared with 31% in 1996. These figures suggest considerable female interest in the subject. But is this figure of roughly one third very recent? At Cambridge, the female percentage of completed economics PhDs (averaged over the period 1980-89) was 21%, while at the LSE it was 18%.[1] At Oxford, 18% of successful DPhils were female in 1980, and 14% in 1989. At Essex, the female percentage of completed economics PhDs (averaged over the period 1980-89) was 13%, while the female percentage of MAs was 19%. In the light of this we might have expected to see a roughly similar percentage in academic economics at senior levels.

Even though approximately one fifth of postgraduates in economics have been female for the last two decades, maybe proportionately fewer women with postgraduate qualifications in economics *choose* to go on to become academics, and perhaps this is why we have observed few female academics. Without surveying female PhDs directly, it is difficult to establish what governs women's choices of a career subsequent to obtaining a PhD. But if it is the case that proportionately fewer female economics PhDs have *chosen* to enter academia, why? One possible reason is neatly summarised by Steven Sedley, Lord Justice of Appeal and an expert in discrimination law, in his recent Hamlyn lectures:

> "Women and members of ethnic minorities still face problems of self confidence even when they are merely deciding to try to enter fields of activity where the white male image dominates. For those who do enter, experience suggests that to succeed they have to do better than their white male counterparts."
> (Sedley, "How laws discriminate", *London Review of Books*, Vol. 21 (9), 29th April, 1999.)

Thus expectations of a less than comfortable lifestyle may have deterred women from entering a traditionally male arena.[2]

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[1] At the LSE, 26% of successful MScs in economics over the period 1980-89 were female. All of these figures were obtained from the academic offices of the various universities.

[2] Younger colleagues may not be aware of the fact that, until relatively recently in many British universities, women were actually banned from entering the senior common room. Interestingly, when Nobel prize-winning crystallographer Dorothy Hodgkin attempted to enter a senior common room at

It is sometimes also suggested that the long hours required of academics may have discouraged young women from embarking on an academic career. (For example, one of the authors of this report was told by an eminent senior academic in the early 1980s that the hours of work and effort required of academics were unsuitable for women.) Yet this effort hypothesis cannot explain the lower proportion of females in academic economics relative to some other fields in academia, nor can it explain why educated females go into the private sector or civil service, where long hours are worked as well.[3] Indeed, an academic lifestyle would appear to be as well-suited to women as men, given the flexible hours, the possibility of day by day inter-temporal substitution - in other words, the *relatively* family-friendly flexibility of an academic career.[4]

Another reason why we should care about the low proportion of female academic economists is if it reflects discrimination or nepotism in the academic job market, either now or in the past. It is possible that, for example, the current stocks in academic economics in 1998 reflect cohort effects - discrimination in the past- and we shall be addressing the question of stocks and flows within our report.

We might also care about the low proportion of female academic economists it if we believe that it represents an efficiency loss. One potential inefficiency is the deadweight loss associated with the type of tax effect arising when women are put off entering a male dominated discipline. Another is the loss of human capital (since it is sometimes argued that women bring with them a different value system that is potentially enriching).[5]

In Section II of this report, we describe the gender balance in academic economics departments in 1998 for academic and research staff, using data from our 1998 survey. In Section III we chart the extent of academic and research staff new hires and promotions over the period 1996-8, using the retrospective information from the 1998 survey. In Section IV, we report the 1998 findings for the gender composition of postgraduate students in economics. In Section V, we compare the results of the 1996 and 1998 surveys, in order to investigate the degree to which the gender position is changing. To do this, we use a slightly different sample from the 1998 survey, in order to ensure that we have a balanced panel for the period 1996-8. In section VI we compare the UK gender balance in academic economics with that of the US. The final section draws some conclusions.

Cambridge, she was carried out forcibly by her male colleagues (Ferry, 1998). In disciplines with historically low proportions of women, this culture may have left a legacy of social exclusion.

[3] Data from waves 1-7 of the British Household Panel Survey show that on average full-time male employees with degrees work a total of 47 hours, while females work 44 hours, a statistically significant difference driven largely by gender differences in the private sector. But when these figures are decomposed into the public and private sectors, we find that both men and women in the civil service or central government work 42 hours, in the rest of the public service work 46 hours, and that there is no statistically significant difference between the sexes in the public sector.

[4] Heads of Departments excepted.

[5] It is interesting that this potential loss of human capital was implicitly given as a reason why we should care about the low proportion of British academics in Britain in a recent article in *The Independent* by Richard Baillie July 1, 1999, who notes that '...a whole generation of British academics is being lost to the profession". The same argument can be applied to women.

II. THE 1998 DATA AND RESULTS FOR STAFF

The data source is the 1998 Royal Economic Society (RES) Survey on the Gender Balance of Academic Economics, conducted by the Institute for Social and Economic Research at the University of Essex on behalf of the RES Committee on Women in Economics. This is a postal survey of heads of the 96 departments listed in 1998 by the Committee of Heads of University Departments of Economics (CHUDE).[6] Details about the sampling procedure and response rate are given in Appendix A, while the survey questionnaire is reprinted in Appendix C. The survey requested information on the numbers of academic staff and postgraduate students in November 1998, and retrospective information on changes in staff and promotions over the period 1996-8, all broken down by gender. The survey response rate was 85.4%. [7] The data source for the 1996 comparisons is the postal survey conducted by Karen Mumford and Denise Osborne, and reported in Mumford (1997, 1998), which used the same sampling frame, but had a higher response rate of 92% of the 1996 CHUDE list.

Table 1 shows the gender composition of academic economists in all responding institutions, broken down by academic grade, full-time or part-time status, and new staff. The total number of individuals is 2015, which is lower than the number of 2346 in 1996, in part because of the different response rates. However, over the period 1996-8 there has also been an overall decline in the university sector. Higher Education Statistical Agency figures for *all* full-time academic staff show a sector-wide decline in absolute numbers, from 111,458 in 1995/6 to 110,484 in 1997/8 (during which time the proportion of women overall has grown from 29% to 31%).

The last row of Table 1 gives the grand totals, and shows that just 19% of all academic economists are women. The last row of each panel gives the totals for (a) all full-time staff, (b) all part-time staff, (c) new full-time staff, and (d) new part-time staff. Subtraction of new staff from all staff gives the stock of staff remaining from 1996, based on retrospective responses to our 1998 survey questionnaire. Some 17% of all full-time staff (see bottom row of Panel A), are female. The proportion female of new full-time staff (Panel C) is 23%, while the proportion female of all part-time staff is 32% (Panel B) and of all new part-time staff is 28% (Panel D).

Table 1 reveals that the vast majority of academic economists (86%) are in standard academic grades (professor, reader, senior lecturer, lecturer) as opposed to research grades, but proportionately fewer women than men are in such jobs (73% compared with 89%). Some 85% of economists in standard academic appointments work full-time. Of the 1705 academics employed full-time, 17% are women. A lower proportion of women (74%) work full-time compared to men (87%), but of all part-time academics, proportionately more are male. We shall now consider each of these employment categories in turn.

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[6] The CHUDE list is available on request.

[7] With the exception of the University of Reading which very quickly responded that that it would not complete the questionnaire, the non-responses involved no return of questionnaire, and were typically from smaller departments with less resources at new universities (see Appendix B for analysis of response rates). Our response rates were lower than in 1996, and we postulate reasons for this in Appendix A, and also describe our procedure for chasing up non-respondents. Nonetheless, a response rate of 85% is very high for a postal survey.

Full-time Academic Employment

We first consider the gender composition of standard full-time academic jobs, excluding research-only positions. If the research-only categories are excluded, women make up 14% of the standard full-time academic workforce. Figure 1 shows full-time standard academic grades, across all institutions. The female proportion decreases as the grade increases; from 28% of fixed term lecturers to 17% of permanent lecturers, 11% of readers/senior lecturers and just 4% of all professors.

Figure 2 shows the grade distribution for all women in full-time standard academic appointments. Some 6% of women in full-time academic appointments are professors, 21% are readers or senior lecturers, 55% are permanent lecturers, 17% are fixed-term lecturers and 1% are "other". Figure 3 shows the same breakdown for men employed in standard full-time academic jobs; 24% are professors with 26% as readers or senior lecturers, 42% are permanent lecturers, 7% are fixed-term lecturers and 1% "other". In other words, men are 1.85 times more likely to occur in the higher grades than women. Men are 4 times more likely to be professors and 1.2 times more likely to be a reader or senior lecturer.

Is there a female role model effect? To examine this, we show the relationship between the presence of female professors in a department, and the proportion of female readers, senior lecturers and lecturers. The first column of Table 2 gives percentages of female staff below the level of professor, banded into 5 groups. These proportions are cross-tabulated against departments with and without at least one female professor. Table 2 suggests that those departments with no female professor are more likely to be at the extremes - either employing no female academic staff or having over 30% of their academic staff as women. Those who employ a female professor are more likely to be in the 10-30% range of female academic staff. However there is no statistically significant relationship between the presence of a female professor and the proportion of female academic staff, so we observe no significant role model effect with our data. However, later in this report we show that there is a statistically significant positive correlation between the proportion of female post-graduate students and the proportion of female academic staff.

Part-time employment

It might be expected that proportionately more women would be employed part-time, since flexible employment allows the combination of academic with child-bearing and traditional caring roles. Moreover, just under half of the female labour force is part-time, compared to only five per cent of men. But this economy-wide distribution of part-time work is not reflected in UK academic economics in the UK. Table 1 shows that 15% of all academic economists are part-time. Of these, just under a third are female (32%). The largest group of part-time workers, 46%, are classified as "other" in the survey, and 30% of these are female.

Table 1 (Panel B) shows that research-only posts represented 13% of all part-time employment, while standard academic posts represented 41% of all part-time employment. Standard academic part-time employment can be divided between permanent (8% of all part-time employees) and fixed-term academic positions (33% of all part-time). These figures are very different to the 1996 results, where 17% of part-time standard academic jobs were permanent and 21% fixed-term, and suggest a move

away from permanent to fixed-term standard academic employment. Men take up the majority of part-time standard academic positions: 73% of permanent and 72% of fixed-term jobs are held by men. Of course the numbers for some of these part-time positions are quite small: there are only 7 permanent and 28 fixed term part-time female academic positions. Though the absolute number of men is larger, their numbers relative to the total are smaller; 28% of women in academia work part-time, compared to 13% of men. Finally, looking only at standard academic positions and research-only positions (i.e., excluding "other" jobs) 15% of women in academia work part-time compared to 7% of men.

The fact that men hold the majority of part-time academic positions raises some interesting questions, which unfortunately we are unable to answer with our data. Are these part-time men doing consultancies or holding two jobs? Are they retired? Are they looking after small children?[8]

Research-only employment

In the 1998 survey there were 285 research-only jobs. These research-only jobs make up 12% of total full-time employment. A higher proportion of women who work full-time are in research-only positions: 30% compared to 11% of the full-time male academic workforce. Although women constitute a larger proportion of the workforce in this sector than in standard academic jobs - 37% of the research-only workforce compared to 16% of the standard academic workforce - men still make up the bulk (65%) of the full-time research only jobs. Most research-only jobs are fixed-term: 71% of full-time research-only jobs are fixed-term, 84% of the women and 64% of the men who work in full-time research-only jobs work on fixed-term contracts.

There are very few *part-time* research-only jobs in academic economics in the UK: from the total survey return there were only 40 people in total who worked part-time in research-only jobs. Just over half (52%) of these are female. At senior researcher level there are only 4.5 part-time positions, of which 2 are held by women and 2.5 by men. There are no permanent part-time researcher positions for either gender, although there are 36 fixed-term researchers of which 19, or 53%, are female.

Figure 4 shows the gender breakdown across various research grades. It reveals a similar pattern to the standard academic appointments. Women are concentrated in the lowest grades- 53% of part-time, fixed-term researchers and 44% of part-time senior researchers. The proportion female falls in the highest grades to 20% of permanent full-time researchers and 19% of senior full-time researchers.

Figure 5 presents the grade pattern amongst women with research-only jobs. Some 11% of women in research-only jobs are at senior level, and 80% are on fixed-term contracts. The figures for men (Figure 6) show that 24% of men in research-only jobs work at senior level and 90% are on fixed-term contracts. Men are 2.2 times more likely to be employed at a senior level compared to women.

[8] It is also interesting to note that members of the RES Women's Committee have heard comments from women in academic economics who have investigated the option of part-time employment with their universities. Since many universities offer no guarantee of reinstatement as a full-time lecturer after a period in part-time employment to raise children, women do not regard this as a sensible long-term strategy.

III. FLOWS: NEW HIRES, STUDENT NUMBERS AND PROMOTIONS

In this section we use the retrospective information from the 1998 survey to document changes over the period 1996-1998 (the questions are given in Appendix C).

New Staff and Inflows into Academia

Table 3 repeats the final column of Panels A and C of Table 1, in order to show the gender composition of new staff compared to all staff in full-time standard academic positions. New staff have been appointed at some time since the 1996 survey and as such are included in the "all staff" column. Across all grades, women represented a higher proportion of new staff compared to all staff. In the conclusions, we speculate on why this might be the case.

The statistics collected in 1998 for "new" staff can be used to estimate the inflows into academia since 1996. This assumes that there are no outflows over the time period, but can also be seen as a rate-of-hiring within the departments. It appears that new hires do change the relative employment position of women, albeit slightly. By subtracting the figures of "new" staff from the total of "all" staff it is possible to see the effect that the hiring of new staff had upon the composition of the faculty. The hiring of female professors (or promotion into the rank) shifted the proportion of female professors from 3.7% in 1996 to 4.1%. There was a slightly greater increase in the reader/senior lecturer grade, with new hires changing the proportion of women from 10% to 11%. Among permanent lecturers, new hires changed the female proportion from 16% to 17%.

There was a very large increase in the proportion of fixed-term lecturers over the period 1996-8. A large majority of the fixed-term lecturers were "new" hires, this may be due to the nature of the fixed-term contract, in that renewal of the contract *may* be considered as a new hire. However, the change in the female proportion among this group suggests that these really are new hires, and that there has been promotion or job termination out of this rank. Of the 125 fixed-term lecturers, 92 were classed as "new". 33% of these new hires were female, moving the proportion of women fixed-term lecturers from 15% to 28%, a big increase.

There were 120 new permanent lecturers hired in the 2 years covered by the survey, 29 (or 24%) of whom were female. This led to an increase in the proportion of female permanent lecturers of 2%. At this rate it would take almost 9 years to bring the relative stock of female lecturers up to the proportion of the inflows of 24%. Among fixed-term lecturers the flow proportions would equal the stock proportions in less than a year.

Student Numbers and Inflows into Academia

One way to establish if there is a problem with the gender balance in 1998 is to investigate whether the supply of female PhDs both currently and in the past is very low relative to men - perhaps this is why there are so few female academic economists. To do this, we first see if the percentage of current female PhDs is substantially higher than the percentage of new female hires into lectureships, and second, we check to see if the percentage of female PhD in the 1980s was substantially higher than the percentage of senior staff currently. (This is of course a somewhat flawed proxy for supply constraints,

first because many Economics Department recruit internationally so the global rather than the UK supply constraints matter, and secondly because the supply of female PhDs may be low on the expectation that a job may be harder for a female to obtain.)

This section draws on the cross-sectional data from the 1998 survey, reported in Table 5. There were 3720 students enrolled in some form of graduate economics program. Of these, 1237 - 33% - were female. Just under two-fifths (39%) of all graduate students are enrolled in research degrees.

The survey also asked about the geographical origin of the students. Females make up a lower proportion of UK PhD students (30%) and non-EU PhD students (30%) and a larger proportion of EU students (39%).[9]

Females are a lower proportion of all PhD students in departments rated 5 or 5* than in all institutions, 30.5% compared to 32.3%. The female proportions of UK PhD students in 5 or 5* departments is lower than for all departments at 25% compared to 30%, also slightly lower for non-EU students, 29.0% compared to 29.3% in all institutions and also lower for EU PhD students, 34.6% compared to 38.7% for all institutions.

The 1998 survey suggests that more female PhDs are becoming fixed-term lecturers. Assuming that PhDs take 4 years and part-time PhDs take 6 years, and that enrolments are constant, the 1998 survey suggests that over the last 2 years 217 female students completed their PhDs and 454 males completed their PhDs. Then, comparing these values with the number of new fixed-term lecturers employed over these last two years - assuming heroically that none go straight into permanent lectureships - we find that 14% of the female and 14% of the male PhD graduating classes took-up standard full-time fixed-term lecturing appointments (16% and 18% if we exclude non-EU students). These data are relatively encouraging for a more equal gender distribution in the future, although it is not necessarily the case that lecturers on fixed term contracts will stay in the academic sector.

Second, we check to see if the percentage of female PhD in the 1980s was substantially higher than the percentage of senior staff currently. As noted in the Introduction, this should give some idea of whether or not supply constraints in the past explain the low percentage of senior women in academic economics. This is a rather difficult procedure, because we do not have any readily available information about the proportion of PhD students who were female in the 1980s. The Economic and Social Research Council (formerly the SSRC) only began collecting a gender breakdown of PhD studentships in 1988, and anyway only a small proportion of PhDs were funded by such studentships (which were then available only to British students). However, information from the ESRC suggests that over the last 10 years there has been an increasing proportion of female PhD students studying within the economics sphere. In 1988 there were only 23 funded research students in economics, of whom only 2 were female (9%). Economics was the third lowest subject area in terms of female representation in 1988. In contrast, by 1998 there were 49 funded research students in economics. Of these, 14 were women (29%).

Our 1998 survey results reported in Table 5 show that around a third of economics PhDs are being undertaken by women. This represents a 4 percentage point increase in the proportion (from 28% in

[9] The figures about students should be viewed as a general indication, because a few institutions did not / could not break the student numbers down by geographical area

1996, as reported in Mumford, 1997 and 1998). The lower female percentage in the 1980s may explain some (but not all) the low proportion of female professors, senior lecturers and readers. We cannot expect to see large proportions of the senior academic positions being held by women if there were so few entering the academic profession a decade previously. On the other hand, if one sixth of PhDs (ignoring studentships which might have been given disproportionately to men) were female in the 1980s, why aren't one sixth senior now?

If numbers were very small, and are relatively higher now, then perhaps we don't need to worry over-much about future gender composition of senior staff, provided that the promotion procedure is not anti-women.

Promotions

What was the gender balance of promotions in the period 1996-8? Using retrospective information from the 1998 survey, we find that between 1996 and 1998 there were a total of 171 promotions for academic economists in the returned sample. Of these only 26 (15%) were for female economists. This is only slightly lower than the proportion of females among all academic staff (16%). Table 4 below shows that women do make up a higher proportion of promotions in part-time jobs than in full-time jobs, although the actual numbers of promotions in part-time jobs was small (18 in total).

Of course we are working on an assumption of a closed system. It is likely that there will be some new hires from abroad, whilst some of those within the UK academic career structure can leave to go abroad. We have no data on any of these flows.

IV. ARE THERE DIFFERENCES BETWEEN INSTITUTIONS?

Establishment of the causes of male domination of the discipline is beyond the scope of this report, given the lack of explanatory variables in the available data. However, it is important to bear in mind the various hypotheses that have been advanced, since they do suggest directions in which analysis of the data might be disaggregated using the few variables we have. For example, if women are more committed to teaching and less committed to their research, as has been occasionally suggested, we might perhaps expect to see proportionately more of them in the new universities where the research culture is not so entrenched, and fewer in the top ranked departments. If there has in the past been prejudice by universities against female promotions, we would expect to see that the numbers of female professors would have grown with the RAE (which has made such discrimination uneconomic). While it is clearly impossible with our data to distinguish between competing hypotheses that are observationally equivalent, it is still important that we keep in mind various hypotheses that might explain the stylised facts.

In this section, we report the gender composition across departments in new and old universities, in the higher and lower ranking universities, and across departments submitting to the Economics and Econometrics Unit at the 1995/6 Research Assessment Exercise and those that did not. The reason for this last choice is that it is often argued that it is easier to obtain a higher research ranking in other panels than in Economics and Econometrics.

Table 6 shows the proportion of women in the standard academic grades broken into different types of institution. In addition to whether the institution was an "old" or "new" university[10], we also use the department's ranking in the 1996 Research Assessment Exercise. Most of the responding institutions were assessed in either the "economics and econometrics" unit or the "business and management studies" unit although there were some in other units of assessment. Only 50 departments were assessed in the "economics and econometrics" unit, and 47 of them responded to the survey. The shaded column is the percentage of women in the row grade for all responding institutions.

[10] New universities are those that were formerly polytechnics, before the elimination of the 'binary divide' between the old universities and the polytechnics in the 1980s

The gender breakdown in Table 6 suggests that there appears to be some difference between types of institution. Older universities, those ranked 4 or above in the 1996 Research Assessment Exercise, and those who were assessed within the "economics and econometrics" unit of assessment in the RAE, all had lower proportions of female professors, readers/senior lecturers and permanent lecturers, although they had a higher proportion of female fixed-term lecturers than the newer universities and those who were ranked below 4 in the RAE.[11] However, there is no statistically significant difference between type of institution and proportion of female academics.[12]

Promotions within a department were also analysed by institution type. As Table 7 shows, there is some variation between the different types of institution. In higher quality departments (graded 4 and above in the RAE), departments in "old" universities, and departments assessed in the "economics and econometrics" unit, the proportion of female economists promoted to the post of professor was higher than for all departments. In general, these types of department promoted women at a higher proportion than other departments. However, the "élite" economics departments (graded 5 or 5*) promoted a lower proportion of female economists to professor. Apart from the much higher proportion of women promoted to the post of permanent lecturer, the 5 or 5* graded departments tended to promote a lower proportion of women compared to all departments.

We also estimated a number of multivariate statistical models of the determinants of the female percentage of academic economists, and the percentage of female postgraduate students, with the unit of observation the department. The full list of variables used in preliminary analyses is given in Appendix B. Most of the variables were insignificant, and the pseudo R-squared is very low. In Table 7a, we report the results of a parsimonious specification of a tobit model for each of these two independent variables. For the female percentage of academic staff, the only significant variable at conventional levels was a departmental score of at least grade 4 in the last RAE, which has a negative effect. For the female percentage of post-graduate students, the most striking result is the significant positive coefficient to the proportion of female staff, which might be interpreted as a role model effect. There is also evidence that departments outside England have a significantly lower proportion of female students.

V. CHANGE OVER TIME

We now briefly compare the results of our 1998 survey with those from the 1996 survey (as reported in Mumford, 1997 and 1998). To do this, a sub-set of both samples are used, in order that we have a

[11] The grading has the following rather curious form: 1, 2, 3i, 3ii, 4, 5, 5*.

[12] Periods of out of the workforce or working part-time may be associated with a reduction of human capital, or with reduced output that is crucial for the research assessment exercise. For these reasons we would expect that department heads may not be keen on part time employment. It is therefore interesting to look at the incidence of part-time employment across the new university/old university divide. Since the emphasis on research has traditionally been less in the new universities, we might expect find a greater incidence of part-time employment there. But we find that both men and women are more likely to work part-time if they are employed in a department which achieved a rank of 4 or greater in the 1996 RAE; in these departments 20% of women work part-time and 10% of men.

balanced panel: only institutions that responded to both the 1996 *and* the 1998 surveys are included in the data-set. There are 82 such departments.

In the 82 institutions that responded to both waves of the survey there was a *decrease* in the number of staff between 1996 and 1998. (This decline was also found for the entire university sector, according to HESA statistics reported earlier in this paper.) In 1996 the balanced panel sample produced 1671 full-time staff (16% female) whilst two years later these same institutions reported 1539 total full-time staff (17% female). The proportion of staff that worked full-time, compared to part-time, was very similar over the two years (84% in both 1996 and 1998). There was a slight movement towards fixed-term contracts and away from permanent contracts among full-time lecturers over the two year (90% fixed term in 1996 and 83% in 1998). This change was even more apparent when looking at part-time academics. In 1996, 54% of part-time economists were on a permanent contract, but by 1998 this had fallen to 22%.

Figures 8 and 9 below show the change in percentages from the 1996 survey to the 1998 survey for academic grade by gender and research grade by gender. As can be seen, there is little change at the highest level (professorial grade declines slightly and senior researcher full-time increases very slightly), but at most of the lower grades the proportion of female economists has increased.

VI. A WIDER PERSPECTIVE

How does the gender composition of academic economics in the United Kingdom compare with a similar English-speaking country, the United States? The US is an interesting comparison, since most universities have operated affirmative action programmes, for both women and ethnic minorities, for some years. Table 8 compares the percentage of female academic economists by grade across these two countries. The US data were collected by the Committee on the Status of Women in the Economics Profession (CSWEP), on behalf of the American Economics Association (AEA), and the most recent information is for September 1997.[13] The table gives the US and UK proportions of female economists by grade, for all institutions and also for the top-ranking institutions alone. For the US, the latter comprise the twenty top-ranking PhD awarding institutions. For the UK figures we use those departments ranked 5 or 5* in the 1996 RAE Economics and Econometrics Panel, comprising 13 departments in all.[14] There is not a direct mapping between US and UK academic titles, but we explain our mapping in the note to Table 8.

It is striking that, at the junior levels, the proportions female are roughly the same for the US and the UK for the top-ranking departments. For all departments, the proportion female is much higher in the US at 26% than for the UK at 18%. At the intermediate grades (senior lecturer or reader for the UK, compared with tenured associate professor for the US), the top 20 US departments have nearly twice the proportion of the top UK departments (16% for the US compared with 9% for the UK), a difference

[13] The US data come from the responses to a postal questionnaire sent to all department chairs in September 1997. Bartlett, Robin L., "Report of the Committee on the Status of Women in the Economics Profession", AEA Papers and Proceedings, Vol. 89, No. 2, May 1999, pp 492-498.

[14] The thirteen are Birkbeck College, Bristol, Cambridge, Essex, Exeter, LSE, Newcastle, Nottingham, Oxford, Southampton, UCL, Warwick, and York.

which might be attributable to affirmative action. At senior grades (professor for the UK and full tenured professor for the US), the US has 7% female across all universities, and 6% for the top 20, while the UK has just 4% across all departments and just over 3% for the top departments.

VII. CONCLUSIONS

In 1996, 4% of professors, 10% of senior lecturers or readers, 16% of permanent lecturers and 23% of fixed term lecturers were female. By 1998, these figures were 4% of professors, 11% of senior lecturers or readers, 17% of permanent lecturers and 28% of fixed term lecturers. Thus the biggest growth in the female proportion was in fixed term lectureships. The low female proportion at higher levels may reflect in part a cohort effect - many women have left academic economics by this stage for whatever reason, and men at senior levels are used to being in a predominately male environment. While the increase in women at the most junior level and the growing proportion of female PhD students (currently standing at one third of all research students in economics) is encouraging, it must be remembered that a fixed term lectureship is the least secure of standard academic jobs, and it is likely that many fixed term lecturers will leave the academic sector in the future

It is interesting to speculate what role the Research Assessment Exercise has played in the expansion of female representation in the more junior positions. While the RAE has some unattractive features (for example, encouraging academics to publish the same idea twice, each time slightly re-packaged; and to focus on journal articles rather than books), there can be no doubt that it has freed up the academic economic labour market in the United Kingdom. It is now more difficult to choose a white male over a black male or a women if the CV of the first is unambiguously dominated by the other candidates. The only opportunity for this now is at the lectureship level, from candidates just completing a PhD, when recruitment is sometimes of necessity done on the basis of "potential". It is interesting that the growth in females has come disproportionately in fixed term lectureships rather than in permanent lectureships. In the absence of any data on the curriculum vitae of new hires we are unable to determine if there is any gender bias in the interpretation of “potential”, and if this may explain why women are relatively more prevalent in fixed term lectureships.

The growing importance of the Research Assessment Exercise (in which ranking is so vital for a department's funding) may also explain in part the growth of female professors from zero in 1992 to 13 full-time female professors by 1998. However, the increase in the number of female professors may also reflect the fact that promotion in economics typically happens at a relatively young age (at least compared with the humanities), and that what we are actually observing is a cohort effect.

Other factors have probably had a positive impact on the gender composition in UK academic economics, and contributed to the growth in female new hires at the lectureship level. Some of these

factors are a greater awareness of potential institutional discrimination (an awareness that has almost certainly been influenced by the RES Committee on Women in Economics and the newly established Committee on the Representation of Ethnic Minorities), and the growth in the proportion of female PhD students since the early 1980s.

For a long time, economics has been viewed as a predominately male preserve and a male subject, and it is possible that this created an environment that was unattractive to many women. Male academic economists were used to working in a men-only environment, and women saw no role models. Moreover, the subject matter of economics may have been narrowly interpreted. But if it were the case that academic economics was viewed as a male preserve, the expansion of economics as a discipline and its growing willingness to take on board ideas from other disciplines (as evidenced by the variety of papers presented at the recent RES Conference) may attract more women into the discipline. Our 1998 Gender Balance Survey shows that one third of PhD students are female. Our regression analysis reveals that the proportion of female students is significantly increased by the proportion of female staff, which may reflect a role model effect. The growing proportion of women at the junior level may both increase the number of graduate students entering graduate economics, as well as have a knock-on effect of increasing the number of senior women academics a few years into the future. It is therefore possible that we may be shifting away from an equilibrium in which the male domination of the discipline, and the deterrent effect this may have on new entrants, may be being replaced by an equilibrium with a more equal gender balance in academic economics.[15]

On the other hand, it is possible that new entrants into academic economics may become put off by the male-dominated environment, and therefore may not choose to become, or to remain as, academic economists. We do not have enough evidence from currently available data to distinguish between the discrimination or environmental hypotheses as to why there are so few women academic economists at higher levels. Has it been the male domination and male emphasis of the discipline that has deters women or drives them out, or has it been discrimination?

There is a growing fascination with possible Darwinian interpretations of human behaviour, as advanced by developments in socio-biology or evolutionary psychology. Are men simply more opportunistic, competitive, single-minded and self-promoting than women,[16] and is this why we observe so few female academic economists? The worst aspect of evolutionary psychology is what Andrew Brown refers to as 'Flintstones anthropology', in which individuals' biases can be justified 'by reference to an idyllic Stone Age for which we were designed to function' (Brown, 1999). This is not to say that evolutionary psychology does not contain powerful insights, but rather that there is a

[15] An equilibrium is defined by economists as a situation in which there is no tendency to change, and which will therefore tend to perpetuate itself. Academic economists have become increasingly fascinated with the possibility of multiple equilibria, and the notion that policy action may be required to shift from one to another. In the context of the gender composition of academic economics, if female representation is low, selection committees may be largely ignorant of the problem, and may treat women as invisible. Women knowing this will not wish to enter. This is one potential equilibrium. But once norms change, through for example affirmative action or other mechanisms to increase the visiblility of women, then attitudes are likely to alter, more women may want to enter, and we may move to a new equilibrium with a greater proportion of women.

[16] See for example the report of work by Helena Cronin at the LSE by Lucy Hodges (1999).

potential danger in immediately adopting an evolutionary psychological interpretation to explain the current gender composition in academic economics, since this can be used to justify institutional discrimination.

There are many potentially interesting research questions raised by this study. The questions about discrimination versus the environment cannot be answered with currently available data, and we need to consider how these issues can be properly addressed in the future. But in the meantime, other initiatives are of vital importance to ensure that we attract and maintain women in academic economics. There can surely be no doubt on equity and efficiency grounds that a greater proportion of females in the profession is desirable. The efficiency grounds, as noted in the introduction, include the deadweight losses associated with the type of tax effect arising when women are put off entering a male dominated discipline. They also include the loss of a different type of human capital (since it is sometimes argued that women bring with them a different value system that is potentially enriching). If, as a profession, we recognise that there is a problem with the gender balance, we can also follow strategies such as those adopted recently by MIT to reduce gender bias in their School of Science (reported in Propper and Bell, 1999). We need no convincing that economics is not a dismal science, but is it a dismal science for women contemplating an academic career?

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APPENDIX A: THE DATA

The Institute for Social and Economic Research at the University of Essex was commissioned by the RES Committee on Women in Economics to carry out a survey and write a report on their behalf. The Institute staff responsible for the survey work are Jonathan Burton and Heather Laurie, both of whom worked with committee members on the design of the new survey. The questionnaire differed slightly from the 1996 survey, in order that promotions and new hires in a department could be covered. The three main considerations in the redesign of the questionnaire were longitudinal continuity, the inclusion of additional questions required, and keeping the length reasonable to avoid damaging response rates.

i) We were concerned to maintain continuity with the previous round of data collection (1996) in terms of both the question wording and questionnaire structure as well as the methodology used. Where questions have been repeated we have maintained the same definitions of staff/student types and categories within questions. The coverage of the survey includes all the items collected in the 1996 survey.

ii) The new element of the survey is the focus on flows through the profession for men and women. In addition to details of appointments made since 30th November 1996, the questionnaire also asked about promotions for men and women since that date. These were broken down by whether or not the staff concerned were in post prior to 30th November 1996 or had been appointed since that date.

iii) The length was restricted to six pages as this was the maximum we felt possible for a self-completion while maintaining high response rates.

Heads of Departments were asked to return the questionnaire by December 18th 1998, the end of the academic term before the Christmas break. This gave Heads of Departments three weeks to complete and return the questionnaire. The survey was sent out as a postal questionnaire, as in 1996. In addition, in late-December a Word version of the questionnaire was emailed to Heads of Departments - where an address was available - which they could complete and return electronically if they preferred. In mid-January there was a second mail out to the non-responding institutions from the first wave, plus a mail out to additional institutions of whom we were informed by the initial respondents. From the beginning of February we started to chase up those from the initial mail-out who had not yet responded. Another half-dozen questionnaires were mailed out as a result of this telephone chasing.

Possible overlaps

There had been some concern about potential overlaps with another survey carried out by Steve Machin, and sent out to Heads of Departments in the early autumn of 1998, asking for breakdowns of staff and student numbers in economics departments. While there was some overlap, the emphasis in the two surveys is somewhat different. In particular, the Machin questionnaire focused on students rather than staff, while the Gender Balance survey picks up more information about staff promotions and part-time appointments. In addition, the Machin questionnaire asked about staffing and student levels over the past five years rather than the last two years as in the Gender Balance questionnaire. While an aim of the Gender Balance survey was to obtain data on flows since the 1996 survey, the Machin questionnaire was not designed to gain this type of information. A further concern was the possible effect on response rates if Heads of Departments felt they had answered a very similar questionnaire in the recent past. We judged that this was not a problem, as there was quite a gap between the two surveys. By November when we mailed out the questionnaires, Heads of Departments would have had many administrative forms pass over their desks, and the memory of the Machin questionnaire would have faded somewhat.

Response-Rates

Initial mail-out (CHUDE sample)	96	
Returned		82
Refused	04	
Non-contact		10
Response-rate		85.4%

APPENDIX B: FURTHER ANALYSIS

(I) Estimates of the Determinants of the Proportion of Female Economists

The relationship between the percentage of female economists and a number of other factors was examined. The dependent variable was the percentage of female staff in the department. The independent variables were:

Whether or not the department was entered into the "Economics and Econometrics" unit of assessment
Score on Research Assessment Exercise (1996)
Dummy variable for those departments scoring 4 or more in the RAE (1996)
Dummy variable for those departments scoring 5 or 5* in the RAE (1996)
Whether or not the institution was an "old" university
A dummy variable for non-English institutions
Total staff - total number of staff in department, taken from the questionnaire data
Total students - total number of students in department, taken from the questionnaire data
Entry standards - Average A and A/S level point scores of first degree students on entry across the institutions 1995-1996
Staff/Student ratio - Average ratio across the institution for first degree full-time students
Teaching assessment - Based on the mean of all TQA subject scores across the institution
Research - Average RAE score per member of staff
Library spending - £ per student
Computer spending - £ per student
Staff and student facilities - spending per student
Firsts and upper seconds - All first degree qualifiers gaining first and upper second class honours degrees in 1995-6
Graduate destinations - All UK-domiciled first degree graduates and leavers taking up employment or further study/training in 1995-6 as a proportion of those with known destinations

The data for entry standards, staff:student ratios, library and computer spending, facilities spending, firsts and upper seconds and graduate destinations were provided by the Higher Education Statistics Agency (HESA). Teaching and research assessments are based on the teaching quality assessments and research assessment exercise carried out by the funding councils. This information was collected by The Times Higher Education Supplement. The data used in this report are from 1998 (except for the RAE data which are from 1996).

We initially included all these explanatory variables in simple OLS and tobit regressions of the determinants of the percentage female staff, and found **no** significant impact of *any* of these variables on the percentage of female staff. The percentage of female students was also analysed with these independent variables. There was **no** relationship between any of these variables and percentage of female students, although the analysis did reveal a statistically significant positive relationship between the percentage of female academic economists and the percentage of female students studying economics at a postgraduate level.

We also estimated parsimonious models of the percentage of staff that are female, and of graduate students that are female, as reported in the text and in Table 7a.

(II) Are Responding Departments Non-representative?

Although we did not receive completed questionnaires from 15 institutions, we were able to obtain basic information on them from HESA. We were able to obtain most of the information which formed the independent variables used above. Although there was no relationship between these independent variables and proportion of female staff, there *were* relationships between these variables and whether or not the institution responded to the survey. Bivariate analysis shows that an institution was more likely to respond to the survey if it:

had higher entry standards
had a high research assessment
was an old university

had more student and staff facilities
spent more on computers per student
spent more on library facilities per student
had a lower student/staff ration
had a higher proportion of firsts and upper second degrees.

APPENDIX C: THE QUESTIONNAIRE

1. Full-time academic staff in post at 30 November 1998

Please give the numbers for all full-time staff as at 30 November 1998 and the numbers appointed between 30 November 1996 and 30 November 1998.

	All full-time staff at 30 Nov 1998		**Full-time staff appointed between 30 Nov 1996 and 30 Nov 1998**			
Contract	**Female**	**Male**	**Female**		**Male**	
Year of Appointment	--	--	*1996-7*	*1997-8*	*1996-7*	*1997-8*
Professor[1]						
Other senior staff[2]						
Lecturer, permanent[3]						
Lecturer, fixed term[3]						

Of those full-time staff appointed between **30 November 1996** and **30 November 1998**, in how many of these cases did the appointment to your department represent a promotion from their previous post?

Female ☐ Male ☐

Promotions since 30 November 1996

Please give the numbers of promotions within your department by the year of promotion for full-time staff appointed before 30 November 1996 and for those appointed between 30 November 1996 and 30 November 1998.

	Promotions since 30 Nov 1996 among full-time staff employed before 30 Nov 1996				**Promotions since 30 Nov 1996 among full-time staff appointed between 30 Nov 1996 and 30 Nov 1998**			
Promoted to:	**Female**		**Male**		**Female**		**Male**	
Year of Promotion	*96-7*	*97-8*	*96-7*	*97-8*	*96-7*	*97-8*	*96-7*	*97-8*
Professor[1]								
Other senior staff[2]								
Lecturer, permanent[3]								

Notes: 1. Anyone on the UCEA/PCEF scale of Head of Department ("new" universities) should be counted as a professor.

2. This includes all readers. Those on the UAP senior lecturer scale ("old" universities) are also included here. Those on the UCEA/PCEF scale of principal lecturer ("new" universities) should be included as senior staff, but those on UCEA/PCEF grade of senior lecturer should be counted as lecturers, permanent or fixed term as appropriate.

3. For this and subsequent tables, "tenure-track" positions should be treated as permanent even when the initial contract is for a fixed term. Contracts for more than three years should also be considered as permanent, rather than fixed term.

2. Part-time academic staff in post at 30 November 1998

Each part-time member of staff should be counted as one person, irrespective of the number of hours worked. Please give the numbers for all part-time staff as at 30 November 1998 and the numbers appointed between 30 November 1996 and 30 November 1998.

	All part-time staff at 30 Nov 1998		**Part-time staff appointed between 30 Nov 1996 and 30 Nov 1998**			
Contract	**Female**	**Male**	**Female**		**Male**	
Year of Appointment	--	--	*96-7*	*97-8*	*96-7*	*97-8*
Professor, permanent						
Professor, fixed term						
Other senior staff, permanent						
Other senior staff, fixed term						
Lecturer, permanent						
Lecturer, fixed term						

Promotions since 30 November 1996

Please give the numbers of promotions by the year of promotion for part-time staff appointed before 30 November 1996 and for those appointed between 30 November 1996 and 30 November 1998.

	Promotions since 30 Nov 1996 among part-time staff employed before 30 Nov 1996				**Promotions since 30 Nov 1996 among part-time staff appointed between 30 Nov 1996 and 30 Nov 1998**			
Promoted to:	**Female**		**Male**		**Female**		**Male**	
Year of Promotion	*96-7*	*97-8*	*96-7*	*97-8*	*96-7*	*97-8*	*96-7*	*97-8*
Professor, permanent								
Professor, fixed term								
Other senior staff, permanent								
Other senior staff, fixed term								
Lecturer, permanent								

3. Other teaching staff in post at 30 November 1998

This category is for **staff not included above,** who are not graduate students but who hold teaching-only contracts with the institution. This category might include, for example, staff employed full-time as teaching assistants, as well as part-time hourly paid or casual staff. It does **not** include research staff who do some teaching.

Note that the numbers are broken up here and for all subsequent tables as full-time/part-time. Separate new staff or promoted staff numbers not requested.

	Full-time		**Part-time**	
Contract type	**Female**	**Male**	**Female**	**Male**
Permanent				
Fixed Term				

4. Research staff in post at 30 November 1998

Includes research assistants, research associates, research fellows, etc., based in the department/unit, whether they are funded by the University or from externally funded projects. **Excludes** PhD students who do some teaching as part of their funding arrangements.

	Full-time		**Part-time**	
Post	**Female**	**Male**	**Female**	**Male**
Senior researcher[1], permanent				
Senior researcher[1], fixed term				
Researcher, permanent				
Researcher, fixed term				

Note 1: Senior researchers are those on UAP research grade III or above.

5. Research students at 30 November 1998

Please give numbers of full-time and part-time students registered for research degrees in economics. We would appreciate a geographical break-down of nationality if this can be provided.

	Full-time		Part-time	
Students from:	**Female**	**Male**	**Female**	**Male**
UK				
Non-UK, but EU				
Non-EU				

6. Taught Masters students at 30 November 1998

Please give numbers of full-time and part-time students registered for taught masters degrees in economics. Students on joint programmes of economics with another discipline should be counted provided at least half of the core component of the programme is in economics. We would appreciate a geographical break-down of nationality if this can be provided.

	Full-time		Part-time	
Students from:	**Female**	**Male**	**Female**	**Male**
UK				
Non-UK, but EU				
Non-EU				

7. Other information

Name of your university: .....

Your department/research institute: .....

Please indicate (by deleting two which do not apply) whether the information above relates to

an entire department of economics
the economics group within a broader academic department
economics within a research institute

Is there any other group of economists in your institution? YES/NO

If yes, could you tell us in which part of the institution they are and either provide a *separate* listing of the numbers of staff in our categories, or supply us below with the name and address of a person we might contact for that information.

In case we have a query, please supply the name and contact information for the person supplying the above information.

Your name:.....

Postal address:.....

.....

.....

Telephone number:.....

Email address:.....

Please return the completed questionnaire in the SAE by <u>Friday 18 December 1998</u>

If you have any queries please contact:
Jonathan Burton
Institute for Social and Economic Research
(incorporating the ESRC Research Centre on Micro-social Change)
University of Essex
Colchester
CO3 4SQ

Tel: 01206 - 873986/ Fax: 01206 - 873151/ Email: jburton@essex.ac.uk

Thank you very much for your co-operation.

Table 1 - Academic Staff, all institutions

Academic Staff: Grade and Gender

Total Return

Primary Employment Function	Female	Male	Total	% Female
Panel A: All Staff : full time				
Professors	13	308	321	4.06
Readers & Senior Lecturers	41	324	365	11.24
Lecturers - permanent	110	530	639	17.13
Lecturers - fixed term	35	90	125	28.11
Senior Researchers	10	42	52	19.23
Researchers - permanent	4	16	20	20.00
Researchers - fixed term	71	102	173	41.16
Other - permanent	0	1	1	0.00
Other - fixed term	3	7	10	30.00
Totals	287	1418	1705	16.81
Panel B: All Staff : part time				
Academic - permanent	7	19	26	26.92
Academic - fixed term	28	73	101	27.72
Senior Researchers	2.00	2.50	5	44.44
Researchers - permanent	0	0	0	0.00
Researchers - fixed term	19	17	36	52.78
Other - permanent	0	6	6	0.00
Other - fixed term	43	94	137	31.39
Totals	99	212	311	31.88
Panel C: New Staff : full time				
Professors	3	51	54	5.61
Readers & Senior Lecturers	7	27	34	20.59
Lecturers - permanent	29	91	120	24.27
Lecturers - fixed term	30	62	92	32.79
Totals	69	230	299	23.12
Panel D: New Staff : part time				
Academic - permanent	3	12	15	20.00
Academic - fixed term	22	51	73	30.14
Totals	25	63	88	28.41
Grand Total	386	1630	2015	19.13

Figure 1: Academic grade by gender, all institutions

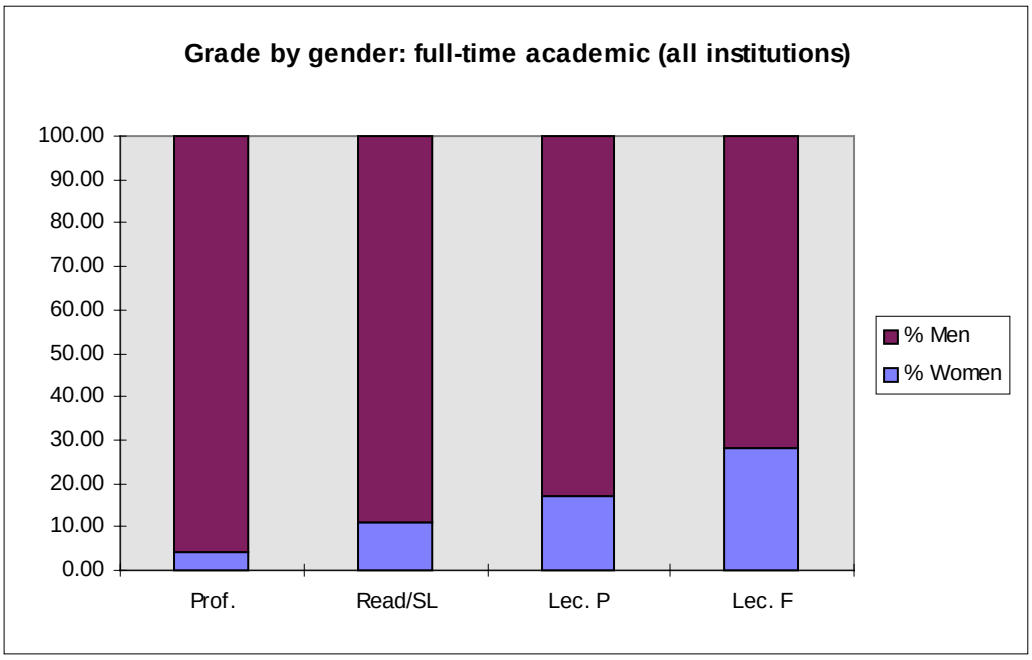


Figure 2: Women by academic grade - all institutions

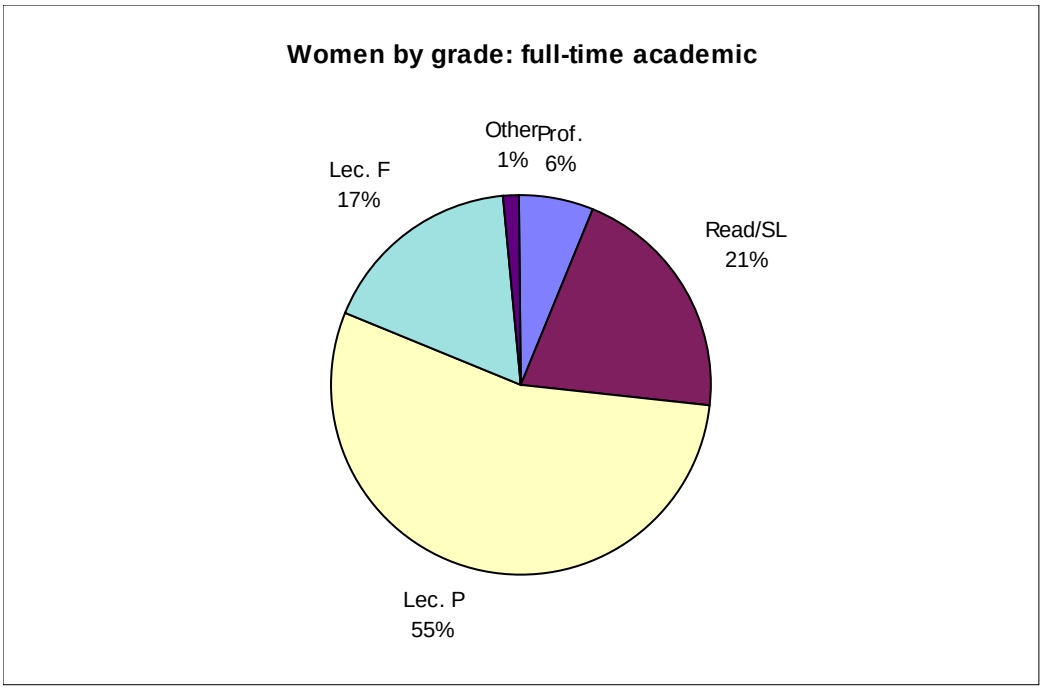


Figure 3: Men by academic grade - all institutions

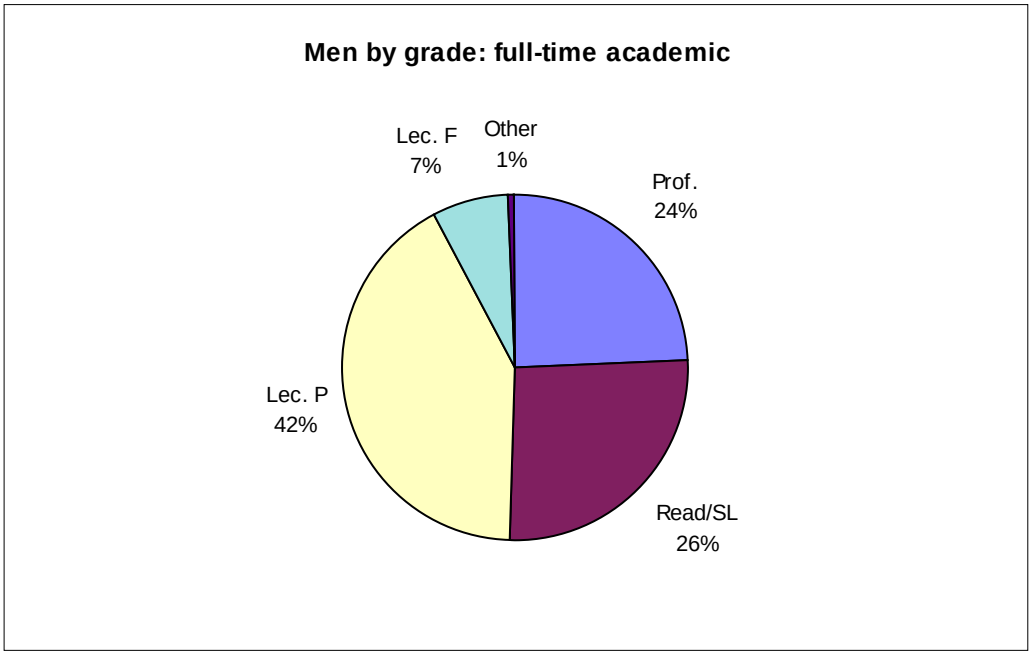
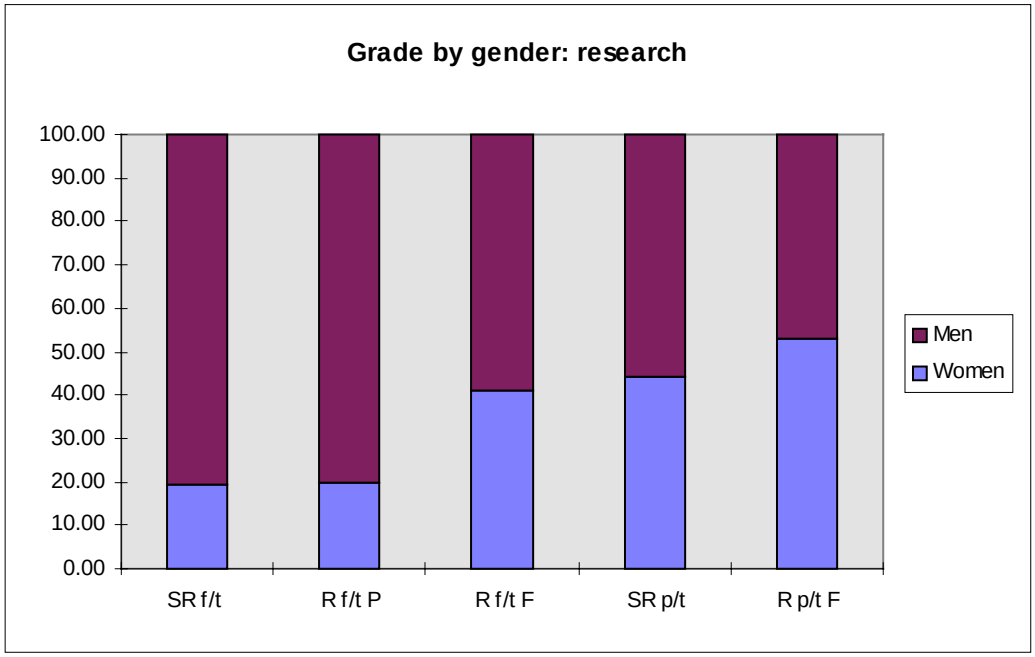


Table 2: Proportion of female academic staff below professor

	No female professor	A female professor
0	18.5	13.3
1-9%	12.3	13.3
10-19%	32.1	26.7
20-29%	22.2	46.7
30+%	14.8	00.0
	n=81	n=15

Figure 4: Research grade by gender - all institutions



SR=Senior Researcher, R=Researcher, f/t=full-time, p/t=part-time, P=Permanent, F=Fixed-term

Figure 5: Women by research grade - all institutions

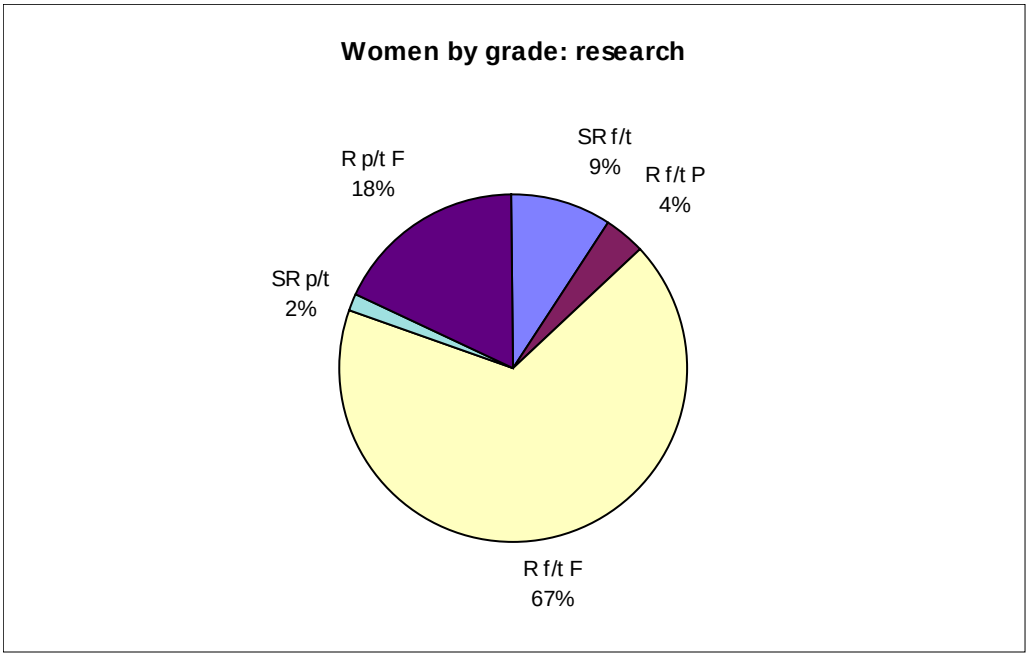


Figure 6: Men by research grade - all institutions

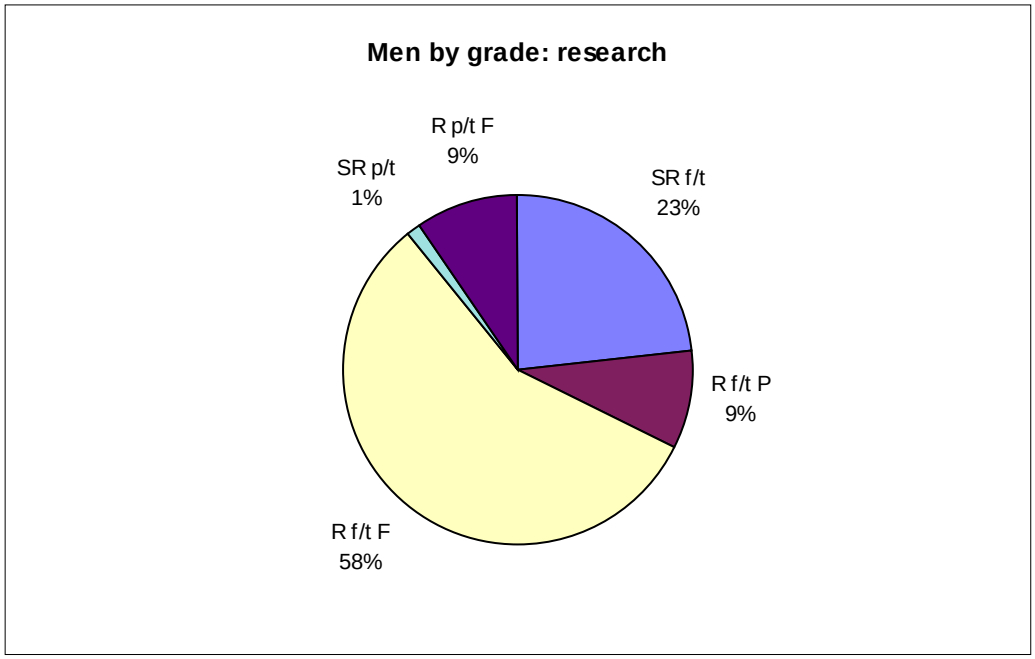


Table 3: Proportion of women in "new" staff - all institutions

	All staff	New staff
Professors	4.1	5.6
Readers & Senior Lecturers	11.2	20.6
Lecturers - permanent	17.1	24.3
Lecturers - fixed term	28.1	32.8

Table 4: Proportion of women promoted - all institutions

	Full-time	Part-time
Professor	11.4	50.0
Other senior staff	12.8	16.7
Lecturer, permanent	17.4	37.5
Total	13.1	33.3
	n=153	n=18
n is the numer of promotions in this table, but the number of departments in other table.		

Table 5: Graduate Students in Economics - all institutions

Graduate Students in Economics

Total Return

	Female	Male	Total	% Female
Research Students				
Full Time				
UK	77	178	255	30.20
Non-UK, EU	144	237	381	37.80
Non-EU	137	334	471	29.09
Total	358	749	1107	32.34
Part Time				
UK	51	123	174	29.31
Non-UK, EU	33	45	78	42.31
Non-EU	31	72	103	30.10
Total	115	240	355	32.39
Masters Students				
Full Time				
UK	160	361	521	30.71
Non-UK, EU	205	375	580	35.34
Non-EU	279	508	787	35.45
Total	644	1244	1888	34.11
Part Time				
UK	76	168	244	31.15
Non-UK, EU	20	39	59	33.90
Non-EU	24	43	67	35.82
Total	120	250	370	32.43
Total - all students				
UK	364	830	1194	30.49
Non-UK, EU	402	696	1098	36.61
Non-EU	471	957	1428	32.98
Total	1237	2483	3720	33.25

Figure 7: Female student proportions

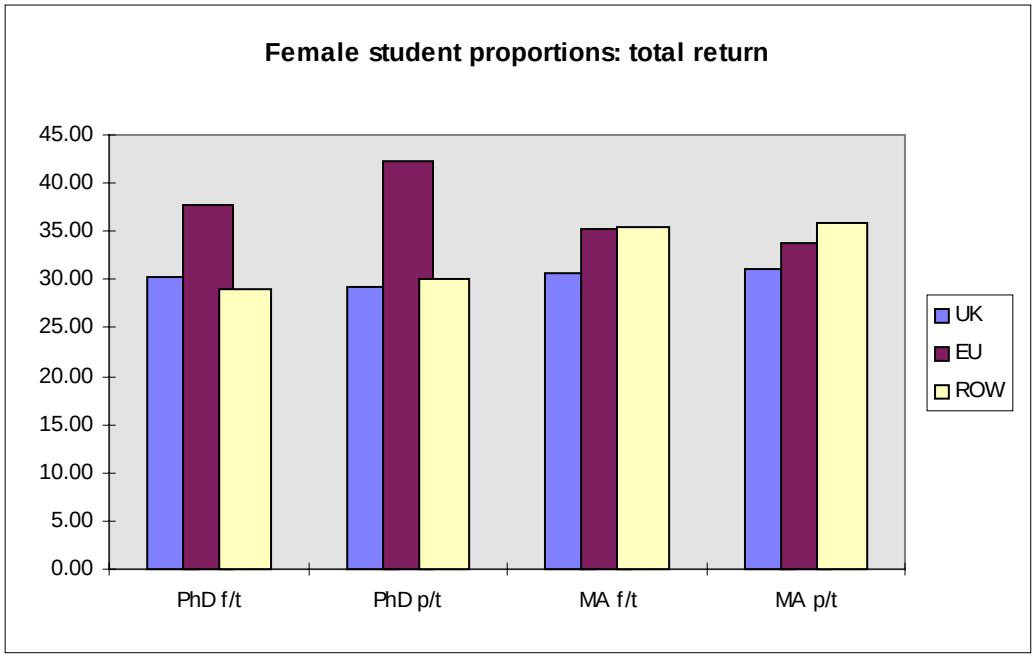


Table 6: Proportion of females in standard academic appointments, across different types of institution

	All	Old	New	4+	<4	5 or 5*	RAE-eco.
Prof.	**4.06**	4.01	4.30	3.32	4.88	3.42	3.85
Read/SL	**11.24**	10.75	12.20	9.30	12.71	8.77	9.86
Lec. P	**17.13**	16.82	18.82	16.15	18.36	14.74	16.80
Lec. F	**28.11**	29.77	17.78	28.00	29.21	33.33	32.40

Old	the old universities
New	institutions who have recently become universities
4+	departments who were graded 4 or above in the 1996 RAE
<4	departments who graded less than 4 in the RAE
5 or 5*	departments who were graded 5 or 5* in the RAE
RAE-eco	departments which were graded in the RAE Economics and Econometrics panel

Table 7 - Promotions for full-time staff: by institution type

	All	4+	5 or 5*	Old	RAE-eco
Professor	11.4	17.9	6.3	13.6	15.2
Other senior staff	12.8	10.0	5.3	15.2	12.7
Lecturer, permanent	17.4	12.4	28.6	16.7	26.7
Total	13.1	14.1	9.5	15.0	15.5
	n=153	n=92	n=42	n=80	n=103

Table 7a: Tobit Estimates Percentage Female Staff and Graduate Students

	Female Academic Staff Percentage		**Female Graduate Student Percentage**	
Variable	Coeff.	t-stat.	Coeff.	t-stat.
Constant	19.732*	6.5	25.562*	4.9
% Female staff	-		0.301*	2.1
Old university	5.286	1.4	6.251	1.2
Department ranked 4+ last RAE	-6.789	-2.0	-5.399	-1.2
Submitted economics panel last RAE	-1.080	-0.3	2.864	0.7
Total staff number	-0.014	-0.1	-0.052	-0.4
Pseudo R-squared	0.01		0.01	
Number of cases	93		81	

*Notes: (i) * denotes significance at 5% level*
(ii) models estimated using Stata 6

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Figure 8: Change over time - Academic grades: 1996 and 1998

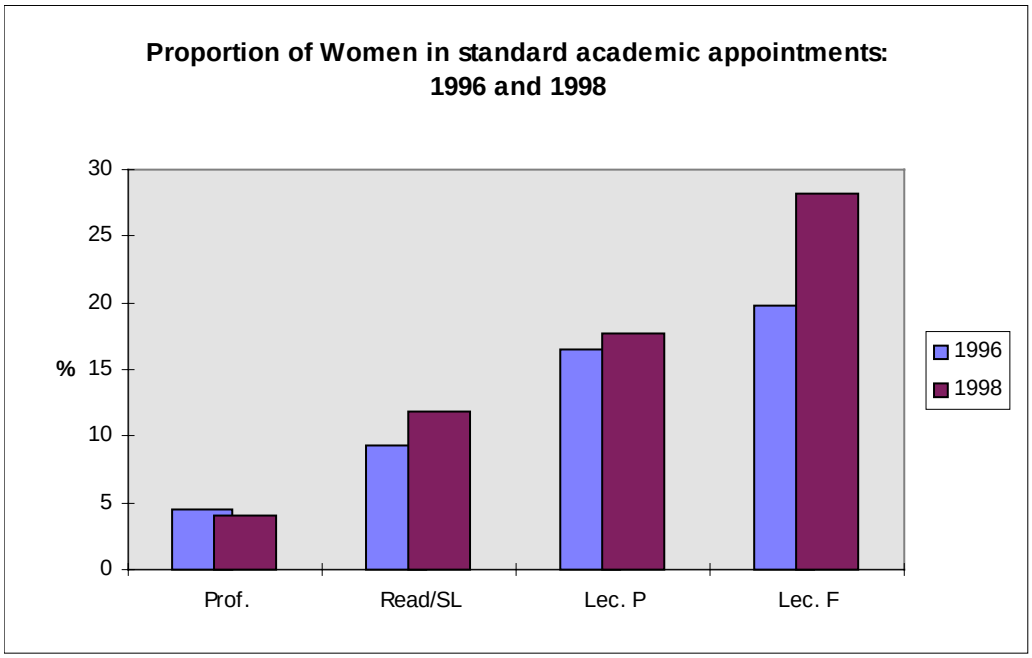

Figure 9: Change over time - Research grades: 1996 and 1998

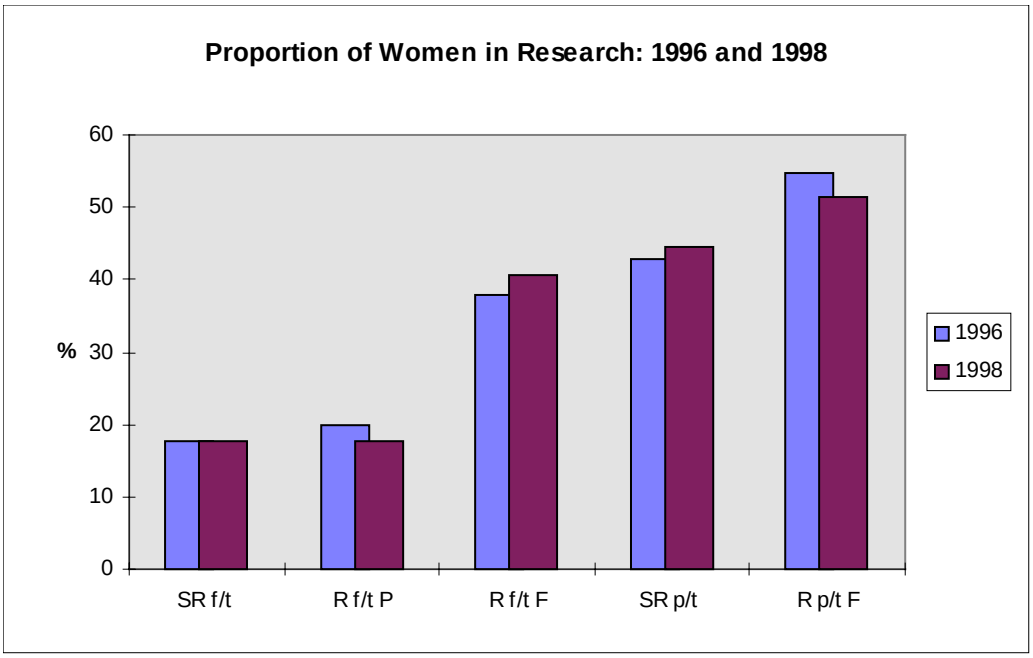

Table 8: A comparison of American and UK universities - proportion of female economists by grade

	US (1997)		UK (1998)	
	All *n=95*	**Top 20** ***n=17***	**All** ***n=86***	**5 or 5*** ***n=13***
Professor	6.5	5.9	4.1	3.4
Snr Lecturer or Reader (UK) or Tenured Associate Prof (US)	13.4	16.0	11.2	8.8
Lecturer (UK) or Assistant Prof (US)	26.0	17.8	18.9	18.2

Note: Figures for the US are untenured at assistant professor level, and tenured at associate and full professor level. Source for US figures: Bartlett (1999), Tables 1 and 2. the number of departments reporting is given at the top of each column (*n).*