



## **SYMPOSIUM: GENDER AND ECONOMICS**

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# **Reaching the Top? On Gender Balance in the Economics Profession**

**CHRISTINA JONUNG<sup>1</sup> AND ANN-CHARLOTTE STÄHLBERG<sup>2</sup>**

### **ABSTRACT**

**IN 1911 THE HIGHER UNIVERSITY COUNCIL AT THE UNIVERSITY OF LUND** debated a committee proposal to admit women to professorial positions. Knut Wicksell, then professor of economics at Lund and an ardent advocate of women's rights, made the following characteristic comment:

On the whole, all masculine reasoning about what women are or are not capable of accomplishing is probably quite superfluous and moreover, in particular as concerns their exclusion from higher office, is to no mean degree reminiscent of the custom of some primitive tribes to render certain especially savory morsels of food “taboo” for womankind.<sup>3</sup>

Today, almost one hundred years since Wicksell's eloquent plea, it is high time to assess the situation with respect to women's access to those delicacies—particularly the positions at the top of the academic career ladder. The 1911 proposal failed. Not until 1925 were women entitled to hold public offices in Sweden, including professorships. The first female professor to hold a regular chair was appointed in medicine in 1937 at the Karolinska Institutet in Stockholm. At Uppsala University the first women professor, in geography, was inaugurated in 1949, while Lund University waited until 1965 to appoint its first woman, in history.

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1 Brussels, Belgium BE-1150.

2 Swedish Institute for Social Research, Stockholm University, Stockholm, Sweden, SE-10691.

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3 Knut Wicksell in 1911, as quoted in Petrini (1934, 20). Our translation.

This article addresses the under-representation of women in academic economics against the background of the situation in Sweden. We examine the participation, opportunities and success of women in economics at Swedish universities (with details relegated to appendices). We compare the situation to Australia, Canada, Great Britain, and the United States. In all, women are under-represented in economics. We discuss various explanations.

In many other countries scholarly attention has been given to the status of women in the economics profession. Economic associations have taken explicit measures with the aim of promoting the careers of female economists. In the US, the American Economic Association in 1972 inaugurated CSWEP, the Committee for the Status of Women in the Economics Profession. Ever since, the committee has closely monitored the situation of women and acted to improve it. In Great Britain, a group within the Royal Economic Society has been working on similar tasks since 1996. In Canada, women economists have had a network of their own since 1990. More recently, in 2002, the Economic Society of Australia established the Committee for Women in Economics.<sup>4</sup>

These committees all pursue a variety of activities: building female networks, helping women early in their career to be included in conference programs, publishing newsletters with professional advice, opportunities, and profiles of senior successful women economists, supporting research on women/gender issues, and organizing mentoring workshops. Above all, they regularly gather information and chart women's progress and identify barriers to advancement.

No similar organization exists in Sweden.<sup>5</sup> Neither has the representation of women in economics been the subject of any systematic studies. In 2003 we published an article in Swedish in the journal of the Swedish Economic Association, *Ekonomisk Debatt*, with the aim of putting the status of women in economics on the agenda in Sweden and drawing comparisons to other countries.<sup>6</sup> Our interest in the issue of the presence of women in academic economics is based not only on the opinion that women should be able to partake in the gourmet meal. We also believe that, if more economists are women, economic analysis will be richer, and if more women are familiar with economic reasoning, public debate will be stronger and deeper.

## WOMEN IN ECONOMICS IN SWEDEN

Sweden introduced a modern doctoral program in 1969.<sup>7</sup> Before that, only a

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4 See the following webpages for more information about the purpose and activities of the different committees: [www.cswep.org](http://www.cswep.org), [www.res.org.uk/society/women.asp](http://www.res.org.uk/society/women.asp), [www.yorku.ca/cwen](http://www.yorku.ca/cwen), [www.ecosoc.org.au/women](http://www.ecosoc.org.au/women). See also the Explorations section of *Feminist Economics* No 3 (Jacobsen 2006) and Bartlett et al. (1998).

5 Nor, so far as we know, has the European Economic Association taken any such initiative.

6 The present article is largely an English, updated adaptation of the *Ekonomisk Debatt* article (Jonung & Ståhlberg 2003).

7 See Wadensjö (1992) for a description of the changes from the old to the new PhD-system.

handful of women obtained a higher university degree in economics. Thus women were absent from university faculties as well.

In short, our results for Sweden are the following:<sup>8</sup>

- In undergraduate economics programs, the proportion of women among first semester students is almost 50 percent—hence, near parity at the “starting line.” But there is a large drop between the first and second semester; a step that usually involves a decision between economics or business administration.
- Women constitute roughly one third of the students beyond second semester in undergraduate economics programs.
- The number of women completing a Master’s degree in economics has been steadily rising, but women’s fraction of the total number has varied due to variations in the number of men.
- Between 1970 and 2005, women’s proportion of doctoral degrees increased from zero to 26 percent. A total of 135 women and 624 men were awarded a doctoral degree between 1970 and 2005. Thus, women constituted 18 percent over the period.
- There were 39 women with a completed PhD working as academic staff in economics departments at Swedish universities in 2006, making 16 percent of the corresponding total.
- That 16 percent is slightly lower than women’s 18-percent share of the total number of economics PhDs in the country.
- Women’s representation of assistant professors is 19 percent, thus lower than their recent PhD graduation record.
- Docent is a title based on system-wide review and awarded to mature scholars, but it is not necessarily connected to employment. Women advance to docent at a rate somewhat lower than men. The proportion of women among docents was 22 percent in 2006, but women make 13 percent of the total number with “docent qualifications”, i.e. with a rank of associate professor or higher.
- The first female professor of economics was appointed in 1993. In 2006, five women, or six percent, were full professors in economics, i.e. those with the Swedish title “professor.”
- Among the male academic economics staff, full professors make 36 percent; among the women, full professors constitute 13 percent.
- In 2006, women represented 16 percent of the members in The Swedish Economics Association. The association features invited speakers and commentators and women’s share was 10 percent in the 2000s, but below that level in previous decades.
- The Swedish Economics Association publishes a public-discourse journal

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<sup>8</sup> The data is found in Appendices 1 and 2.

*Ekonomisk Debatt.* Female representation in authorship rose from around 2 percent in the 1970s to around 7 percent in the 1980s and up to around 10 to 15 percent in the 1990s and 2000s.

### A LEAKY PIPELINE?

The situation for women in academic economics has been described as a “leaky pipe-line.” In Sweden, the most significant “leak” is after the very first semester—as noted, a large portion of women exit then. From the second semester, we find rates of continuation to higher levels, through graduate education, only slightly lower for women than men.

Until the 1970s only two women had graduated with a PhD in economics in Sweden. The first, in 1924, was Margit Cassel, daughter of the famous economist Gustav Cassel. The second, Karin Kock, completed her degree in 1929. She became Sweden’s first female cabinet minister and was given the title of professor in economics in 1945, albeit without a chair. In addition, three other women completed the licentiate-degree in economics, a somewhat lower degree, but at the time more or less equivalent to the PhD of today. Out of these five, Karin Kock was the only one who worked as an academic teacher and researcher.<sup>9</sup>

The 1970s saw the influx to the Swedish universities of the large birth-cohorts of the 1940s, as well as the establishing of the new US-style doctoral program. Since then, significant changes have taken place. Women’s share of PhD completions rose from 7 to 9 percent during the 1970s and 1980s, up to around 17 to 18 percent in the 1990s, reaching 26 percent in the beginning of the 2000s. The number of women graduating during the last decade is almost triple that during the two and a half decades before combined.

The data in appendix A indicate that male and female rates of completing graduate studies once you have entered graduate school are about equal. If there is no further leakage at this level we can expect that in the coming years the proportion of women among PhD graduates in economics will rise to 30-35 percent.

As for the career after PhD, women have remained in academic pursuits to almost the same extent as men.<sup>10</sup> However, the proportion of women among assistant professors today compared to the proportion of females of the PhDs in the past decade gives cause for concern, as there appears to be leakage from

9 See Henriksson (2000) for an overview of Karin Kock’s impressive career. Recently Niskanen (2007) has applied a gender approach to analyze Kock’s career as a scientist and a public official. She exposes the strong gendered structures of economics at the time, as well as how Kock handled the direct and indirect discrimination she met.

10 The Swedish academic system has by tradition been rather closed with little cross-border movements, perhaps with the exception for movements among the Nordic countries. Thus we think this conclusion is plausible. Recently, international recruitment and competition is increasing, especially on the full professor level, but as yet we do not find it large enough to influence the conclusions in this study.

graduation to continued academic research.

The greatest hurdle for women is advancement to full professor. This is another significant “leak.” The proportion of women of the full professors in economics corresponds to women’s proportion of completed doctorates in the 1970s, three decades ago. If women progressed as men do, what percentage of full professors in 2007 would we expect to be women? It takes many years to qualify for a full professorship. We must then look at women among the PhDs in economics about 15 years back in time. At that time this proportion was around 8-10 percent. From a gender equality perspective, we should thus have had about three more women full professors at Swedish universities today.

### THE SITUATION IN OTHER DISCIPLINES

Is the gender balance in economics worse than in other academic disciplines in Sweden? The proper norm for comparison may of course be a subject of contention. Should it be women in education or academic positions in general at the universities, women in the other social sciences, or maybe women in the natural sciences or the engineering schools? The answer might be related to one’s view on the nature of economics—is the essential characteristic of the discipline found in abstract explorations or in applications and public discourse?

The homepage of Statistics Sweden displays pretty much any norm of comparison one may wish to use.<sup>11</sup> We have selected data for the universities as a whole, the social-sciences as a whole, and political science, business administration and mathematics. The results are displayed in Table 1.

**Table 1. Graduate Students, Teaching and Research Staff by Subject Area and Sex. Percent women 2005**

	Total (%)	Full professor (%)	Doctoral students/degrees (%)
All	29	17	45 <sup>a</sup>
Social sciences	34	19	51 <sup>a</sup>
Political science	27	23	52 <sup>b</sup>
Business administration	20	13	58 <sup>b</sup>
Mathematics	15	5	17 <sup>a</sup>
Economics	17	1	26 <sup>a</sup>

Note: a) completed degrees b) registered doctoral students. Source: [www.scb.se](http://www.scb.se), Utbildning och forskning.

<sup>11</sup> The data is found under “Education and research” (Utbildning och forskning) at [www.scb.se](http://www.scb.se).

The collection and presentation of data by Statistics Sweden is not the same as ours. It counts academic staff by type of employment, not credentials. Thus, persons with a docent title cannot be identified. Also, for reasons we have not been able to determine, Statistics Sweden registered only one female professor in economics in 2005. In order to have data comparable between the subjects, we stick to the data from Statistics Sweden throughout Table 1.

Accordingly, in 2005, women constituted 29 percent of all those employed as professors, research assistants, and university lecturers at Swedish universities, and 17 percent of the full professors. Finally, women completed no less than 45 percent of all doctoral degrees. In the social sciences, women fared even better, constituting 51 percent of the doctors, 34 percent of the teaching and research staff, and 19 percent of the full professors. Table 1 shows that women are much more present in business administration and political science than in economics. All of the comparisons indicate under-representation in economics.<sup>12</sup>

Doctoral degrees by women are 17 percent in mathematics as compared to 26 percent in economics. Percent faculty women is 15 percent in mathematics, versus 17 percent in economics. However, women full professors in mathematics were 5 percent (a total number of 8 persons), higher than the 1 percent (1 person) in economics according to Statistics Sweden. From these data, economics appears to be more like mathematics than the other social sciences.

### **ACROSS THE 5 COUNTRIES, THE SITUATION IS REMARKABLY ALIKE**

From student enrollment<sup>13</sup> to faculty positions, the representation of women in economics in leading Anglophonic countries is rather similar to Sweden. In Table 2 we provide comparative data on the female representation among graduate students and academic staff. Our overall impression is that the situation for

12 The figures above are for the point in time 2005. The Swedish National Agency for Higher Education (Högskoleverket 2006) recently presented longitudinal data for the cohorts graduating with a PhD between 1980 and 1991. Not surprisingly they find that men become full professors to a much larger extent than women, regardless of academic field. As an illustration, among those who obtained their doctorates in 1991, 8 percent of the men, but only 4 percent of the women became full professors within a twelve-year period. There is no indication of later cohorts catching up.

13 In the US in the 1970s women made about one-quarter of undergraduate economics majors. Women's proportion of economics majors peaked in the mid-eighties, then fell and stabilized around 30 percent in the early nineties, and briefly re-attained the earlier peak 35 percent in the early 2000s (Blau 2004, Siegfried 2006). For 2004-05 Siegfried (2006) reports 32 percent women among economics majors. For Great Britain in 1998, Booth et al. (2000) note a proportion of 34 percent women among students enrolled for a Masters in economics, whilst the latest survey of the Royal Economic Society finds the level up to no less than 42 percent in 2004 (Burton and Humphries 2006). The British study (Burton and Humphries 2006) points to the differences between UK-citizens and students from abroad. Of the students from the UK, the proportion of women is only 26 percent, and thus it was significantly higher among foreign students. A Canadian study reports that women made 39 percent of the total Masters program participants in 1999 (CEA 2001). In Australia, in 2002, 42 percent of the total number of undergraduates and 37 percent of the honors enrollment were women (Hopkins 2004).

women in academic economics is remarkably alike across the five countries. The countries show the same pattern of increasing under-representation by seniority and status. Women PhD students today make around one third of the enrolled in the five countries, but much less among academic staff. In four of the countries we also find almost a third of the assistant professors to be women. Sweden with 19 percent differs significantly.

Most striking is the low representation of women among full professors, ranging from 5 to 9 percent. In several countries, like in Sweden, women economics full professors are new since the 1990s. Also, they are few in absolute numbers. Australia, for example, reports four women full professors in 2003. Another common observation in all the studies is that women are under-represented in economics relative to academia as a whole.

Ginther & Kahn (2004) include comparisons by academic field within the US. They find a lower percentage of women doctorates in economics than in statistics, political science, and the life sciences, about the same in physical sciences, while it is higher in economics than in engineering. The percentage of tenured female faculty follows the same pattern. The differences between men and women in the probability of promotion and the duration to tenure are the largest in economics.

**Table 2. Representation of Women by Academic Grade in Sweden, USA, Great Britain, Canada and Australia. Percent Women**

Country	Sweden 2006	USA 2005	Great Britain 2004	Canada 1999	Australia 2002
Full professor	6	8	9	5	5
Associate professor, senior lecturer	22	20	16	11	13/16
Assistant professor, lecturer	19	30	30	31	31
Total	16	16	19	13	20 <sup>a</sup>
PhD-students	32	32	32	32	31
Completed PhD	26	31		27	

Note: For Sweden "Full professor" is "professor", "associate professor, senior lecturer" corresponds to "docent" and "assistant professor, lecturer" is researcher/teacher with a completed PhD. a) includes associate lecturers. Sources: USA: CSWEP's annual report 2005, Great Britain: Burton & Humphries (2006), Australia: Hopkins (2004), Canada: CEA (2001), Sweden; this article Table A3, A4 and A5.

Although the studies lack extensive trend data, they nonetheless indicate that women have made significant gains over time among doctoral students and those employed in lower academic ranks. The Australian study reports stability

in the overall proportion of women faculty, but an improvement in female representation at the top end of the academic hierarchy between 1997 and 2002. PhD enrollment increased slightly during the same period. The Royal Economic Society surveys, conducted bi-annually since 1996, show a gradual increase in the proportion of women graduate students as well as faculty, with greater gains at higher academic grades. The proportion of female professors, although low in number, doubled over the period. The Canadian study provides only the situation for one year, 1999.

In the US the status of women in economics has been monitored over many years, ever since the inception of CSWEP in 1972.<sup>14</sup> Since 1972, women's fraction of PhDs awarded has quadrupled, from 8 percent to 31 percent. In 1972 women made less than 5 percent of faculty members compared to 16 percent in 2005. In addition women full professors constituted 8 percent in 2005, up from only 2 percent in 1972. The development has varied from year to year. A few periods of stagnation or decrease notwithstanding, the trend has been a continual rise. Nonetheless there is some indication that the female share of new PhDs has more or less plateaued since the late 1990s, but the percentage of female assistant and associate professors has risen in the last decade as a whole. On the other hand, women's representation among full professors was at about the same level in 2005 as ten years earlier. While the flow of women into the economics profession seems to have started somewhat earlier in the US, the other countries included in Table 2 now appear to be catching up. Despite the US lead in the output of doctorates for a number of years, we do not see the corresponding differences at the seniority level among academic staff. The low representation of women at the academic grade of full professor in the US cannot be explained as a cohort effect.

It is intriguing that the situation is so similar across the five countries, despite large differences in academic systems, labor markets, women's labor-market participation, fertility, and family policies.

### WHY SO FEW WOMEN ECONOMICS PROFESSORS?

It is tempting to once again cite Knut Wicksell—this time from the poetic “Address to Woman” delivered at the Nordic student festival at Uppsala University in 1878. This fiercely feminist poem, which appeared before he started studying economics and which immediately made him notorious all over Sweden (Gårdlund 1995, p. 38-39), departed radically from the traditional themes of women's grace and beauty and instead included verses on poverty, prostitution, and women's low wages. In a sharply ironical verse, he suggested that because of women's diminu-

<sup>14</sup> The annual reports from The Committee on the Status of Women in the Economics Profession (CSWEP) can be found in the Proceedings section of the May-issue of the American Economic Review. The data we have used for the US are from economics departments with a PhD program.

tive appetites, men wisely “arranged it all,” such that the fruits of women’s labors “in just proportions should be small.” However, this suggestion was set out many years before Wicksell started studying economics. Let us thus speculate further about reasons for the lack of gender balance in economics.

There are three questions to be answered:

1. Why are women underrepresented in economics?
2. What explains the rapid inflow of women during the 1990s and 2000s?
3. Why do women not advance more readily to full professorship?

The study of the field of economics by the Swedish National Agency for Higher Education explains the low presence of women in economics in the following way: “The discipline is considered to make demands for abstract and analytical thinking as well as proficiency in mathematics, which are said to not attract female students” (Högskoleverket 2002, 10).<sup>15</sup> We find it difficult to believe in such a simple explanation. In particular, how then would we explain the strong flow of women into economics in the five countries, at the same time as the profession has moved in the direction of more abstraction and more mathematics?

In general, economists regard occupational segregation by gender as the outcome of complicated interplay of supply and demand.<sup>16</sup> Tastes and preferences, talents and capabilities may be part of the story but economists generally stress human capital investments guided by expectations about future labor market participation. Other economic theories emphasize discrimination or structures and institutions that inhibit certain choices or make them more costly for one gender than the other.

Most likely it is increased and extended labor force involvement—not a change in women’s capacity for abstract and analytical thinking—that has contributed to their enhanced interest in economics. Goldin et al. (2007) analyze the narrowing and reversal of the US gender gap in college attendance. According to their findings increased expectations about future employment, rising age at first marriage, more effective birth control methods, and postponed childbearing encouraged women’s investments in education. At the same time as women increased their overall investments, they started taking more math and science courses in high school and began catching up with boys on achievement tests in this area. These same factors, investing for a future in the labor market, should have worked to stimulate women’s entry into economics.

In addition, the more visible women economists become—as economic journalists, public intellectuals, public officials, professors, and researchers—the more women will see economics as a realistic, attractive, and profitable career

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<sup>15</sup> This is similar to one of the arguments made by Lawrence Summers in his now infamous presentation at Harvard, suggesting that women and men differ in abilities. See May (2006).

<sup>16</sup> For a review see Jonung (1998).

choice. This is the so called role-model effect (Booth et al. 2000, Hopkins 2004, and Burton & Humphries 2006). It is worthwhile to note that such a role model effect also influences the demand side. If employers get used to seeing women in positions as professional economists, the basis for and expected return of any statistical discrimination will be reduced and employers will be less hesitant to hire women economists. A vicious cycle inhibiting women's choice will change to a virtuous cycle of expanding choice. With increased attachment to the labor force by women, we should expect a continued rise in women's fraction of economists.

Research on the market for new PhDs in the US also indicates that the problems for women in the "early pipeline" are limited (Siegfried & Stock 2004, Siegfried & Richs 2006, Stock 2006). For most of the outcomes studied—financial aid, attrition, time-to-degree, full-time permanent employment, obtaining an academic job, starting salary, and measures of job satisfaction—there are no significant differences between men and women, controlling for other determinants.

Why then have women economists found it difficult to advance and obtain the same economic rewards within university hierarchies as men? Is this just a cohort effect reflecting the recent entry of women into economics, where we can expect the young women streaming into economics to catch up eventually and find their way into professorial positions? After all, with the exception of the US, there were hardly any women professors at all before 1990. Thus, there is certainly a cohort effect present. However, all of the country studies cited above conclude that the cohort effect and the time it takes to move along the pipe-line is not a sufficient explanation for the low presence of women at higher levels. Everywhere there appears to be a glass-ceiling, either in the tenure-decision or in the promotion to full professor. Other studies, mainly on the basis of US data, have identified gender differences in wages and other economic returns as well.<sup>17</sup>

The proposed explanations for the lack of women professors in general and their lower economic rewards are no different than the causes suggested for the lack of women in positions of authority in other areas, as managers, business leaders or top public officials. Roughly we can divide the explanations in four areas: (1) discrimination—those responsible for recruitment and promotion prefer men; (2) preferences and family obligations—women take the larger share of family and child-care which restricts their input at work and lowers their productivity or makes women chose career tracks that are less demanding; (3) societal institutions—the combination of labor markets, wage setting, family policies, social policies, tax policies creates differential incentives for men and women and may encourage a gender division of labor; and (4) institutional factors internal to a profession or an organization. All of these explanations have in various forms been put forward to explain the lack of women at the top positions in economics as well.

Several studies of women in economics focus on the probability of obtain-

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17 See Blackaby et al. (2005), Ginther & Kahn (2004), (2006a), (2006b), McDowell et al. (1999, 2001), and Stock (2006).

ing tenure and being promoted to full professorships. They find a promotion gap, such that women's prospects of obtaining tenure are inferior to those of comparable men. The differences in probability of promotion cannot be explained by observable characteristics such as age, family characteristics, quality of PhD-training, field, employer, or publications.<sup>18</sup> The promotion gap difference still persists in the 1990s (Ginther and Kahn 2004). While family characteristics (marriage and children improving men's promotion chances while harming women's) and productivity differences to some extent explain women's slower progress in economics, a significant portion of the gender promotion gap remains unexplained.

Ginther and Kahn (2004, 2006a, and 2006b) further explore the differences between economics and other academic fields. An important result of their work is that the outcomes for women differ significantly by academic field. In all aspects, economics is found to be an outlier, the academic field with the greatest gender differences in career attainment. The female proportion of the tenured faculty is lower in economics than within the sciences and far lower than within the social sciences. Women in economics take longer and are less likely to achieve tenure compared to men than in other disciplines. The effect of factors such as having small children on obtaining a tenure track job or promotion to tenure or full professor is stronger than within the other sciences. The explanatory variables used, representing various family and productivity characteristics, explain less of the promotion gap in economics than elsewhere.

One commonly invoked explanation for women's slow advancement in economics is that they publish less in scientific journals; as such publications are the most important academic qualification today. Indeed, some research indicates that publications are more important for women's advancement than men's (Ginther & Kahn 2004). Lindqvist (2003) ranked all Swedish researchers in economics on the basis of their publications in international journals from 1969 to 2002. He looked at a somewhat wider group than ours, including emeriti, persons at external research-institutes and some who do not have a degree in economics but work in economic research institutes. In his study, there are four female professors out of 130, i.e. three percent. The corresponding number for female associate professors (docents) is 18 percent and for PhDs 20 percent. The publications in his study are weighted according to the status of the journal in which they have been published.

Women economists publish far less than men according to this ranking. Although women in total constitute 14 percent of the researchers studied, they only gather 1.8 percent out of the total publication points. However, the situation looks quite different according to the researcher's level of qualifications. The female full professors hold only 0.1 percent of the total publication points for full professors, the female associates hold 5 percent, but the female PhDs hold as much as 16 percent of the total points for this group. Thus, among the younger group of

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18 See e.g. Kahn (1995), McDowell et al. (1999, 2001), Ginther and Kahn (2004).

PhDs, women's publication record is not that much poorer than that of men. In other words, women's average publication points in relation to those of men are 3 percent, 26 percent, and 74 percent for the respective academic rank.<sup>19</sup> However, we do not know if the gap will grow as these women get older.

Publication credits as measured by the method of ranking of Lindqvist are very unevenly distributed. The ten most prominent economists in Sweden are credited with 40 percent of the total publication points. Thus, the absence of women in the top group has a significant effect. The highest-ranking woman is found in place 79 with 32 points compared to 1300 for the highest-ranking man.

Henrekson and Waldenström (2007) study different measures ranking the performance of researchers in economics in Sweden. They caution against the use of one-dimensional measures of output and criticize, for example, the endorsement of a specific measure by the European Economic Association. Comparing seven different measures, they find that the measure which is endorsed (the one used by Lindqvist above) gives rise to a particularly skewed distribution of output among professors and exhibits the weakest correlation with other measures. Most interesting from our perspective is their result regarding the performance of men and women. Among the seven measures, it is only one (the one favored by EEA) where the gender variable is found to be statistically significant, indicating better research performance for male professors. With the six alternative measures, based on publications as well as citations, no difference can be ascertained. The choice of a performance measure may thus in itself be gender biased.

Even if a less impressive publication record might partly explain women's sluggish progress in economics, the question remains: Why do women publish less than men? One suggestion is the presence of sorting by gender, such that men write with men and women with women, thus making it more difficult for the minority, women, to find co-authors.<sup>20</sup> Women single-author more frequently than men. A recent study (Boschini & Sjögren 2007) does indeed establish that co-authorship in economics is not gender-neutral and that there is a gender sorting, not related to field, university affiliation, or seniority. As the share of women in the profession rises, women may find it easier to find co-authors, but on the other hand gender-segregation may increase and we cannot expect the prevalence of gender-mixed team to automatically grow.

Another suggestion, particularly in the US environment, is that the academy is a family-hostile environment, with the expectations of total career commitment and short leaves at child-birth.<sup>21</sup> Why then would Sweden—according to some

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19 Results in Boschini & Sjögren (2007) are similar; the publication gap is small or non-existent for younger women. According to the investigation by the Canadian Economic Association (2001) younger women publish even more than younger men, while the opposite is true for more senior researchers.

20 This is i.a. suggested by Ginther & Kahn (2004), Kahn (1995) and McDowell et al. (1999, 2001).

21 See e.g. the discussion on Work and Family in Academia: Striking the Balance in *CSWEP Newsletter* Spring/Summer 2007.

gender equality indices the most equal in the world<sup>22</sup>—have been so slow in attracting women into professorships and have such a scarcity of women at top levels in management and professions? In Sweden many of the family-friendly policies seen as the solution for achieving more gender equality in other countries are already in place, such as generous parental leaves at child-birth and for sick children, extended child-care, opportunities for part-time work, as well as large degree of public and political consensus on the goal of gender equality. However, as pointed out by many researchers, these policies may act as a double-edged sword.<sup>23</sup> While the family policies help in combining work and family, they may not encourage women's aspirations to higher positions. The generous leaves for child-care make women take long absences from work (80 percent of leave time taken is taken by women). The high level of taxation, partly generated by such generous policies, may make the pecuniary rewards of a high work effort and time-input seem too small. This is re-enforced by relatively high wages at the bottom end of the wage-distribution, making it expensive to buy services. Thus, the family-friendly climate in Sweden may encourage fertility and labor force participation by women, but provide small incentive for pursuing top-level careers.

As standard variables have not been able to explain the lack of progress of women through rank, a number of studies have discussed factors internal to departments or research organizations (e.g. Kahn 1995, Siegfried & Stock 2004, McDowell et al. 2001, and Booth et al. 2000). Women tend to do more teaching than men (Stock 2006). Women may choose to take on—or be pressured into taking on—administrative work. The desire to have female representation on various committees and for external assignments tends to over-load the small number of women. Being a minority may make it more difficult for women to find inspiration, mentors, or engage in professional networks. These are the very reasons for the founding of female-economist organizations and networks.

Sometimes it is suggested that the very professional culture, developed through history by men, keep women out.<sup>24</sup> The “rules of the game” are set by the values of the majority. Klein (2005, 145) describes academic economics as a self-organizing, self-validating club, in which you are initiated through graduate training, similar at top schools throughout the world. Looking at PhD production and placement, he shows that the top economics departments dominate and arguably set the tone of the profession. His paper does not consider gender issues. While Klein worries that the outcome may be a conformist political culture, another outcome could be a culture shaped by male values, putting women off. There are a number of studies on the influence of values and social norms on economic decision making. As far as we know they have not been applied to the economics

22 See for example the gender empowerment measure by UNDP ([link](#)), or the global gender gap report by the World Economic Forum. [Link](#).

23 See e.g. Albrecht et al. (2003), Meyersson et al. (2006), and Booth (2007).

24 May (2006) describes the arguments that have been put forward to defend women's absence in academia, adopting a historical perspective.

profession itself. Colander and Holmes (2007) have studied how women fare at the top US graduate schools in economics. They find evidence that women are less satisfied with their studies and less integrated in the academic economics profession than men.<sup>25</sup> We do not know if the same applies to female faculty.

Finally, all the possible reasons for the under-representation of women professors suggested above apply to all scientific fields. We are still left with the question why economics, from the studies available so far, seems to be less gender-balanced than any other field? Why does economics differ from other social sciences as well as natural sciences? Maybe future studies could identify fields more similar to economics—perhaps mathematics or philosophy?

### THE FUTURE

What are the changes in gender balance that we can expect in the foreseeable future? How quickly will the current trend of a rising supply and greater publication consciousness of women doctorates in economics be reflected in the composition of teachers, researchers, and professors at the universities? In the immediate future in Sweden, many faculty members from the large birth cohorts of the 1940s will enter retirement, making room for change.

In our Swedish article on the status of women in the economics profession (Jonung & Ståhlberg 2003), we used information on the distribution of the academic staff in economics across age, sex, and academic rank in 2001 to estimate the number of retirees as well as the recruitment base for the positions likely to be opened for the next ten years through the process of retirement.<sup>26</sup> We estimated that if women were to receive positions in direct proportion to their fraction of the recruitment base, by 2011 there would be about 6 percent women among full professors and 18 percent women among associates and lecturers.

The purpose of our calculations was to demonstrate how slowly the process of transformation works in a system such as a university hierarchy, where it may take up to two decades to demonstrate ability and achieve advancement. We pointed out that the calculations assumed a static system and might be altered by the creation of new positions, the arrival of competent persons from abroad, new forms for professorships, etc. Today, we can already observe that the expectations have been surpassed. Women's proportion of full professors is up to the level projected for 2011 and their proportion of lecturers/associates has surpassed expectations. Women have so far progressed through the system faster than anticipated.

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<sup>25</sup> They suggest that one of the causes may be a focus on abstract theory rather than applied policy in core courses of major graduate programs.

<sup>26</sup> The distribution table was developed by the Swedish Confederation of Professional Associations. See Jonung & Ståhlberg (2003) for references and methods.

On the other hand, we may compare the Swedish situation with developments in the United States. Despite a strong output of women doctorates for a number of decades, the growth in the proportion of women among full professors has only been around a few percentage points per decade. During the last decade the proportion has remained around 8 percent, varying between 6 and 9 percent. An increased supply of women with research competence does not automatically lead to an increased representation of women among full professors.

### REACHING THE TOP

Women in economics were rare in Sweden well into the 1970s. Since then substantial changes have taken place. Nevertheless, despite an increasing number of women attaining a PhD during the past three decades, only 5 women, or six percent, were full professors of economics in 2006. In the pipeline we find women to be about one fifth of the associate and assistant professors, about one fourth of the PhD graduates and about one third of the upper-level economics students. Women's representation in academic economics in Sweden is remarkably similar to that in other countries for which we have comparable data. Women are under-represented and everywhere the hardest glass ceiling is found at the top, either in the tenure-decision or in the promotion to full professor. Another common experience in various countries, including Sweden, is that economics is less gender-balanced than the universities as a whole or the social sciences in general, and in some cases less so than in the natural sciences as well.

There is no consensus as to the causes of women's slow advancement in academic economics. Even after adjusting for factors representing family background or productivity a considerable portion of the gender promotion gap remains unexplained. In addition, the search for explanations has to consider the exceptionality of economics.

The much sought-after fruits are there—at the top, in principle accessible to all. However, to reach them requires climbing—ladders and branches. It is a laborious climb; it requires purposefulness, technique, cooperation, capacity to take hard blows, and now and then a helping hand from those higher up. Neither is it evident from the bottom where the most savory pieces of fruits are located, nor where the most advantageous climbing route is to be found. Our survey shows that women are on track, have developed a taste for economics, appropriated the climbing techniques and are numerous enough to assist each other en route. However, it has also illustrated that the climb is long and time consuming. It will take several decades before we can hope for a common, gender-balanced, feast.

University training in economics is an excellent route by which to acquire influence in public debate and policymaking. When women in the field of economics are few, it means that their influence on the economic agenda—the questions

studied by economists, the methods by which they are analyzed, and the answers given—will be relatively small. Thus, the absence of women in economics is not only an example of gender inequality; it may also cause further gender inequality. Alternatively, if as economists we believe in economics as a rich and powerful tool to analyze the world and to reach wise decisions on policy, we would want this tool to be in women's hands also. A recent article in the *Economist* (April 12, 2006) coins the term *Womenomics* to describe women's rising importance in the global market place—as workers, consumers, entrepreneurs, and investors. As more economic decisions are taken by women, more women with training in economics would seem to be a wise social investment. Thus, there are reasons to monitor women's progress and the gender balance in economics.

#### APPENDICES

Appendix 1: Data on Women Economists in Sweden, by Christina Jonung and Ann-Charlotte Ståhlberg. [Link](#).

Appendix 2: Women in Professional and Public Economic Debate, by Christina Jonung and Ann-Charlotte Ståhlberg. [Link](#).

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#### ABOUT THE AUTHORS

**Christina Jonung** obtained an MA from UCLA and a licentiate in economics from Lund University in 1985. She worked for many years as lecturer, administrator, and researcher at the department of economics at Lund University. Her research has focused on gender and economics, in particular occupational segregation. She edited (with Inga Persson) *Economics of the Family and Family Policies* (1997) and *Women's Work and Wages* (1998). In 1987-88 she served (with Ann-Charlotte Ståhlberg) as editor of *Ekonomisk Debatt*, a Swedish economic policy journal. She is now retired, works free-lance, and lives in Brussels. Her email address is Christina.Jonung@skynet.be.

**Ann-Charlotte Ståhlberg** is professor of economics at the Swedish Institute for Social Research, Stockholm University. She earned her PhD from Lund University in 1977. She has served as expert in a number of public investigations on pensions and social policy. Her major research interests are the economics of the welfare state and social insurance. She has published widely in the area of gender and social security. Among her recent publications are “Why Sweden’s pension reform was able to be successfully implemented,” *European Journal of Political Economy* (with Jan Selén) and “Pension Design and Gender: Analyses of Developed and Developing Countries,” in *Gender and Social Security Reform: What’s Fair for Women?* (with Agneta Kruse and Annika Sundén). Her email address is ann-charlotte.stahlberg@sofi.su.se.

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