Time for Men to Catch up on Women?

A Study of the Swedish Gender Wage Gap 1973-2012.

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Abstract

The Swedish gender wage gap decreased substantially from the 1960s until the beginning of the 1980s. At the same time women had been narrowing men in employment experience and education. While women continued to catch up on men the average wage gap remained almost the same as in the 1980s. The catch-up hypothesis was obviously not the sole answer to the wage-gap. The purpose here was to discuss other factors of relevance for the evolution of the average pay gap. Data for the period 1972-2012 is used in the analysis: The results are mixed and firm conclusions are scarce. Some indications though, the older the women are at first birth the smaller the pay gap and the same for female union membership while unemployment, economic growth, fertility and time made the gap larger. It seems as "time", often reliable on issues such as changes in attitudes and prejudices, cannot settle this. One finding, common in other studies as well, is the influence "children" may have on the wage gap. If postponement of motherhood and/or fewer children is necessary to reduce the gender wage gap the question whether this is desirable or not must be addressed more seriously. If the answer is "no" it may be high time for men to catch up on women - through sharing the full responsibility for children and household duties.

Key words: Gender wage-gap, education, employment, fertility, parental leave

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1 Introduction

A widespread view has long been that the gender wage gap is a consequence of women lagging behind men. A reasonable opinion as long as the differences between men and women were huge in labor market related issues such as experience and education. The catch-up hypothesis stated that as soon as women had caught up with men the gap would more or less disappear. The substantial gender-convergence on this matter has not been met in a way that was expected. Today you may even say that the situation has become the reversed - women are in some cases out-performing men but still the wage-gap remains. This makes it natural to question "catching-up" as a relevant explanation, or even an issue, for the gender wage gap today. It may be necessary to choose another approach in order to understand the gender wage gap in the Swedish labor market.

One approach may be to look for other factors, other than those referring to women explicitly. Factors that preserve the gap directly or indirectly through counteracting the full catch-up effect of women. Such an approach should neither exclude "the cost of children" nor the reward-system in the workplace. In such a context the idea of "catching up" may also play a role, but now out of a male perspective. If the gender pay gap will ever be closed it is necessary to address the fact that men are lagging behind women in almost all kind of family related issues. Men catching up on women, in child care and other work related to the household, may increase the probability for a smaller gender gap as they must be looked upon as key factors today.

There is a large literature on the gender wage gap highlighting various reasons to the observed wage differences and their power to explain the gap. Most studies focus differences in male and female labor and their personal characteristics. In this paper I will study the gender gap out of a long term perspective. The assumption is though that for the evolution of the gender wage gap a blend of structural and political indicators may be as important as differences in individuals´ capacity and qualifications. The aim is to investigate the gender wage gap in Sweden for the period 1973-2012, identify changes of special relevance for the issue and uncover their conceivable impact on the wage gap. The questions are whether the catching-up hypothesis has been of any relevance in this context or not, what influence other factors may have had on the gap and lastly if there are anything supporting the idea that it is high time for men to catch up on women? The paper proceeds with a short historical background in section

2. Section 3 contains a descriptive analysis out of a "catch-up" perspective. In section 4 the empirical model is presented, in section 5 the results and in 6 the conclusions.

2 History and previous studies – a short background

In 1971 the Swedish parliament decided to replace the system of joint taxation with individual taxation of spouses.[1] This decision was of great significance for women in general and married women in particular. Before 1971 a woman´s income from work on the labor market had been added to her husband's, which made her contribution heavily taxed. Women's work was, in that respect, considered less profitable for the household. On these grounds the economic incitements for most wives to participate on the labor market were weak.[2] An immediate effect of an individualized assessment was therefore an increase in female participation rate.[3]

The reform itself was not only profitable for married women who wanted to work outside the home, it was also an important step to recognize women, married or not, as part of the labor force. This was crucial in many respects, not least since it challenged prejudices and traditional views on women and their roles on different arenas. At that time, the early 1970s, the conditions on the Swedish labor market were far from gender equal. Although work for, or at least discussions about gender equality had become more common there were few concrete results.

Much re-thinking among politicians, employers as well as among the public in general was necessary before any fundamental change was possible. One important issue was to convince a political majority that a social infrastructure would be necessary in order to enable women to combine paid work and family in a reasonable way.[4] Such a majority was also formed and a social infrastructure accommodated for a modern family was soon appearing. Together with extensive investments in the educational system and an increasing interest in ameliorating

[1] Swedish women could ask for separate taxation from 1965. From 1971 it became mandatory.
[2] The decision to abandon joint taxation was, however, not taken without discussions. There were many objections, not least from married women taking care of the family on a full time basis. As some tax-benefits for families with one bread winner were going to disappear, the reform was met with reluctance and even hostility. There were also general (ideological) worries concerning the family as such and its chances to survive with the new tax system.
[3] Selin (2009) shows that "female employment would have been 10 percentage points lower if the 1969 statutory income tax system, which to a large part rested on joint taxation, would have been in place 1975. These estimates point at that the reform effect was substantial and that most of it operated through the increase in net wages." (p29)
[4] A "social infrastructure" that facilitates for women (and men) to combine work and family must e.g. comprise child care and a parental insurance that regulates length of leave and pay.

women's relative earnings this contributed in replacing the "one"-bread winner model" with the "two"-breadwinner model. Although many women entered the labor market on a part-time basis the two-breadwinner model was surprisingly fast established. The supply of part-time jobs during the 1970s was substantial and was, primarily due to lack of childcare, an accepted alternative for many women, at least among those with pre-school children.[5]

The wage gap between men and women was also paid attention to for reason of both national and international concern. The gender gap was not only a Swedish phenomenon but a worldwide one and the ILO-convention No. 100 from 1951 on *"Equal remuneration for work of equal value"* made a lot to initiate a general discussion around this issue. The research in this area has been, and still is, extensive in most countries where women are present on the labor market and the results are strikingly similar: Women were previously and are still on average paid less than men internationally, irrespective of whether they are working within the same occupation, branch, sector or not.[6] Although the scope of the *gender wage gap* was evident in Sweden, like in many other countries, the politicians were not ready for an immediate ratification of the ILO-convention. However, the discussions were intense during the whole of the 1950s and the disputes unmasked a society where it was apparent that men were the dominant part, not only in the labor force but also in politics, trade unions, employers' confederations and businesses.

The debate came to an end in 1962, when the ILO-convention was approved by the Swedish parliament.[7] In order to avoid this legislation the social partners had already in 1960 reached an agreement that abolished separate wage tariffs for men and women and replaced them with one joint tariff.[8,9] These important occurrences, however, did not reduce the attention on the gender pay gap, rather the opposite. Thanks to the "equal-pay debate" numerous of previously less well known facts had been brought to the surface, which made equal pay and the gender

[5] Some would probably say that women had become "double-workers". One paid job in the market (full- or part time) and one unpaid in the household (full-time).

[6] Although the gender gap may be of equal size the *level* of salaries and wages may differ enormously between countries, which makes global comparisons unreliable.

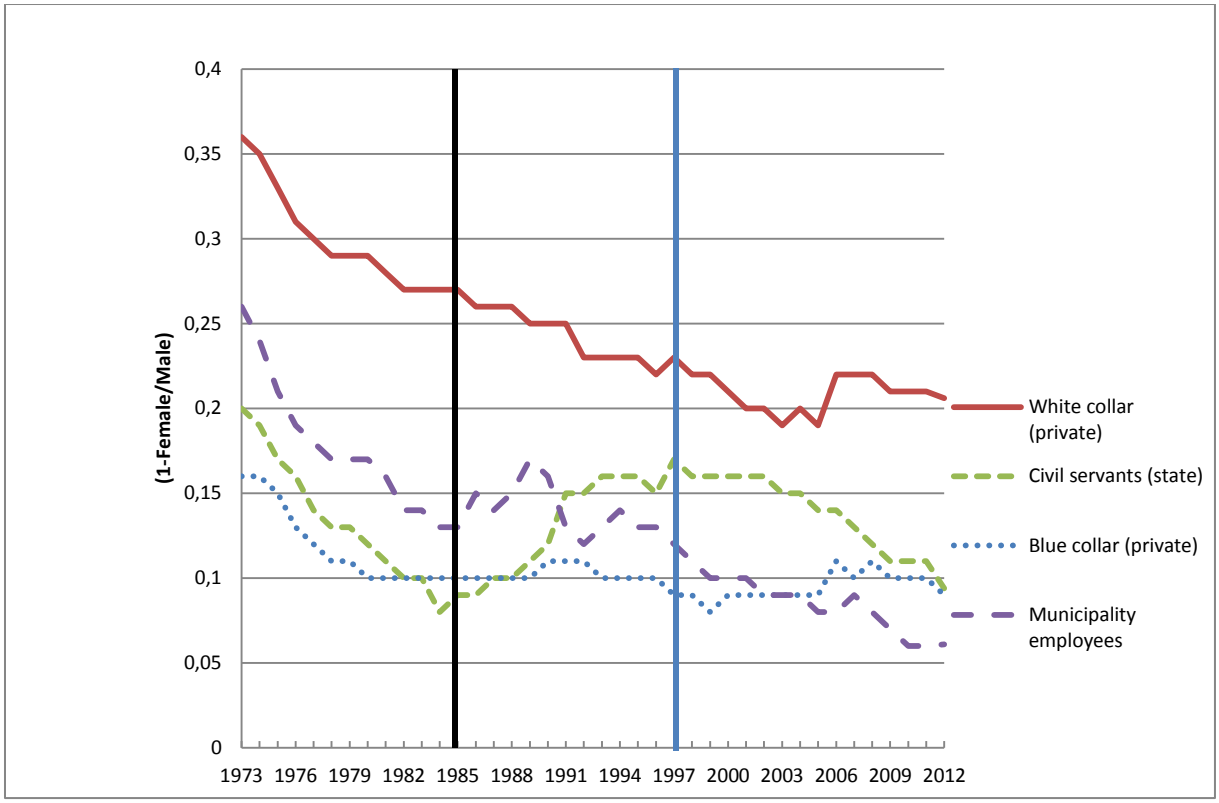
[7] This is one of ILO's eight main conventions. Sweden did ratify it June 6th, 1962. In 2012, 168 out of ILO's 183 member states had approved this convention. The debate on equal pay was not new in Sweden. Already in 1947 the teachers reached an agreement on equal pay to male and female teachers.

[8] It has been argued that threat on legislation made the social partners agree on this matter. A general agreement between the social partners on the Swedish labor market in 1938 had made it a rule to negotiate and reach agreements on a voluntary basis as a way to avoid legislation on labor market matters.

[9] One reason to pay women less than men was that they were said to have a "handicap", due to their main tasks as mothers and wives.

wage gap an issue to be paid more, not less, attention to.[10] Furthermore, this was the right time for action and change, since the Swedish economy was running extremely well during the 1960s. This laid the foundations of many reforms, including the ones supporting gender equality. The result was also soon visible. Figure 1 below illustrates the evolution of the gender pay gap during the whole period, 1973-2012, and how fast the gap decreased at the beginning of this period.

Figure 1: Gender wage gap 1973-2012. (Source: Statistics Sweden)



The reduction was mutual in the four dominant groups in the labor market from the 1960s until the beginning of the 1980s, although from different levels. The development after that has been more mixed. In the private sector the average gap between blue collar men and women has been almost constant since the beginning of the 1980s, around ten percentage points. Among white collar workers the gap was reduced until the end of the 1990s but after that this trend stopped and the gap has since then been around 20 percentage points.

[10] In 1965 the government decided e.g. to start an investigation on the situation for low income earners. The full report was published in 1970. One result that paid much attention to was that women's wages and incomes were extremely low at that time. (Låginkomstutredningen SOU 1970:24/Low Income Survey)

In the public sector the reduction of the gap was also impressive until the 1980s. In the municipalities it continued to shrink during the whole period with exceptions for a few years in the 1980s. Today its average is approximately five percentage points. In the state sector the prelude was as the previous groups but from the 1980s the reverse happened, the gap became larger. This lasted until the beginning of the 1990s when a ten years period of constant gap followed, around 15 percentage points. After that it decreased again and today the average gap is around ten percentage points, i.e. the same as 30 years ago.

From this simple description it can be concluded that the gender pay gap was (i) substantial in all sectors at the beginning of the 1970s, (ii) it was substantially reduced in all groups until the beginning of the 1980s, (iii) the diminishing trend was permanently interrupted in one sector and temporarily in two and lastly (iv) for the time being the gender wage gap remains in all groups although the level varies.

Fifty years after the ILO-ratification and forty years after the introduction of the individualized tax-reform it is clear that the reduction of the gender pay gap has been substantial. The significance of these two reforms may, however, be hard to assess since their impact is more indirect than direct which has, most likely, made other factors as important.

Previous studies

A large volume of literature on the gender wage gap has been published during the last four decades. The majority of the studies are cross-sectional, while studies on the evolution of the gap, time-series studies, are less common. The interest in the former is natural, due to the dominating focus on explaining the wage gap out of a supply perspective, i.e. differentials in men's and women's individual and personal characteristics and qualifications. Another reason for this interest may have been the growing access to suitable data for this type of analysis. The approach where political, economical and structural changes are in focus may be less common but since they are intertwined with individual changes they might be hard to separate. Decisions made by men and women on how much they will work on the labor market, their level of education and if and when they will have children are not only a result of their own preferences and priorities, but also of factors out of their control. In this paper I will highlight some of these since I believe it is important in order to better understand the complexity of the gender pay gap.

In a very early study where I investigated the effect of new laws and agreements from the 1960s and onwards on female relative wages in Sweden one finding was that an increase in female relative wages was not, as expected, followed by a reduced demand for female labor.[11] Another was that technological development, productivity improvements and higher level of education were important for rising wages, but it was also clear that labor related reforms, such as laws prohibiting employers to discriminate women and the equal pay act from 1962, contributed positively to reducing the gender gap. The solidarity wage policy, applied in the 1960s and 1970s, and its purpose on general wage-compression highlighted the low income earners and as women constituted, and still constitute, a large portion of this group they were now and then given top priority at the wage negotiations.[12]

Many studies on Swedish data have been occupied with the effect of the solidarity wage policy and its central components in particular: centralized wage setting and general wage-compression.[13] The high degree of union density among men and women in Sweden across all educational and occupational groups meant that the system covered most employees on the labor market. This system was, however, questioned and in 1983, when two of the key figures on the labor market actually broke up from the central negotiations, it may be claimed that a new era began.[14] The arguments in favor of such a change varied from a wide spread dissatisfaction among employers towards the unions' strong position on the labor market to direct recruit problems following too small wage dispersion within specific occupational groups.[15]

In a study where the prime interest was the evolution of the gender earning gap and the role of wage compression panel data for four different years, 1968, 1974, 1981 and 1991, were used.[16] This made it possible to say something about the evolution. A declining pay gap during this period was found but the extent varied from period to period.[17] The tentative conclusions were that "solidarity wage policy may, through reducing residual wage inequality, have played an important role in the decreasing gender wage gap in the late 1960s and early 1970s. In the late 1970s, however, wage compression does not seem to be a major

[11] Löfström (1989)
[12] These wage-agreements could, occasionally, include extra to those with low pay ("låglönepotter") in general, and/or extra to women on grounds of low pay ("kvinnolönepotter").
[13] See e.g. Hibbs & Locking (1996), Calmfors & Drifill (1988), Edin & Richardsson (1999)
[14] The union for metal workers and their employer counterpart.
[15] This is hardly accidental that this change occurred at this point of time since it was preceded by a period (1976-1982) of a non-Social Democrats governing in Sweden for the first time in 44 years.
[16] Edin & Richardsson (1999)
[17] See e.g Edin et al for a description.

factor".[18] The small wage-differentials also benefited low-paid women in particular, at least until the mid-1980s.

Studies on international differences by Blau and Kahn do also show the role different wage-setting institutions may have. They differ between the countries and so do their implications for wage structures and hence for wage inequality and the gender wage gap. The US system with a highly decentralized system of wage setting is also a country with larger gender wage gap compared to other industrialized countries with a more centralized system and wirh collective bargaining. Contrary to Sweden the long-lasting wage-gap in the US, the UK and Australia was mainly interpreted as a result of discrimination. One reason for this was their focus on minority groups in general, i.e. not women in particular. The studies have therefore often focused on the effects of anti-discrimination legislation. This was for example the case in the US in the 1960s and in the UK in the 1970s. The fundamental research on this matter was performed by Gary Becker already in the 1950s which contributed substantially to understanding all kind of discrimination on the labor market.[19] His thesis, which preceded the American anti-discriminations laws, mainly dealt with the differences between white and black labor but was as suitable for female labor. This made this legislation also beneficial for them as well.[20]

In the UK the Equal Pay Act was introduced in 1970 and this law, together with the Sex Discrimination Act, was passed in 1975. Results from different studies are mostly the same: Women's wages did improve after the laws were passed and there were no negative effects on their employment, rather the opposite.[21]

Research performed during the last twenty years on the gender gap is still preoccupied with supply related factors. Although the sex-differentials in labor market experience and level and choice of education are very small, or non-existent, today the supply related factors are still important. If the previous factors were easily accepted as reasonable explanation to the wage gap, as mirroring actual productivity differences between men and women, the latter may be harder to identify. However, one line of immense interest has been the effect on labor market outcome of having a family, primarily children. Several studies have also confirmed that the consequences for both men and women of having a family on their own are huge but

[18] ibid p 26
[19] Becker (1971)
[20] The Equal Pay Act of 1963 and the Civil Rights Act of 1964.
[21] See e.g Chiplin (1979), Chiplin et al (1980) for UK, Cain (1986), Blau & Kahn (1984) for US and Bonell (1987), Gregory & Duncan (1981) for the Australian case.

different. There is, so far as I know, not a single study showing that women ever have been rewarded in the labor market for giving birth, rather the opposite, while studies confirming the positive effect of becoming a father are not uncommon.

The penalty women have experienced are due to a vast variety of conceptions and stereotypes of women "transforming" into mothers. Women with one or more children are likely to work fewer hours than men, they are assumed to make less of effort on the job, their human capital will be out-dated since they spend time at home and they will, per definition, always place family business before job business.[22]This is called statistical discrimination since the only ground for this perception is the statistics showing that a female parent, *on average*, is actually spending more time with the child than a male parent.

One way to reduce the female penalty is to make it possible for women not only to maintain their jobs in the labor market but also to continue the career. The supply of childcare facilities is in that case crucial since lack of places will put a limit for women to participate. The governmental interventions will be decisive through e.g building child care centers, facilitating entries and by subsidizing fees for child care.[23] This is fundamental but the actions taken by the employers are also very important. How do they organize and remunerate jobs? Is it done in a way that systematically penalizes those who temporary leave the labor market - than women with children are at risk. In a recent paper by Claudia Goldin she expresses this very clearly: "The gender gap in pay would be considerably reduced and might vanish altogether if firms did not have an incentive to disproportionately reward individuals who labored long hours and worked particular hours."[24]

"Equal pay" has been on the agenda in most western countries for a long time now, but nevertheless no country has so far delivered a zero-result, i.e. no gender related wage gap. It seems as if "equal pay" is an elusive, or you may say a constantly moving target. "Equal pay" is however not just a question of money; it might as well be a question of social and political factors. Are the anti-discrimination laws efficient enough, does the social infrastructure fulfill its commitments towards men and women, and to what extent has the dominant culture at different working sites and offices been changed to suit the new gender mix in the labor market? These questions are still looking for unequivocal answers and for obvious reasons are still lacking.

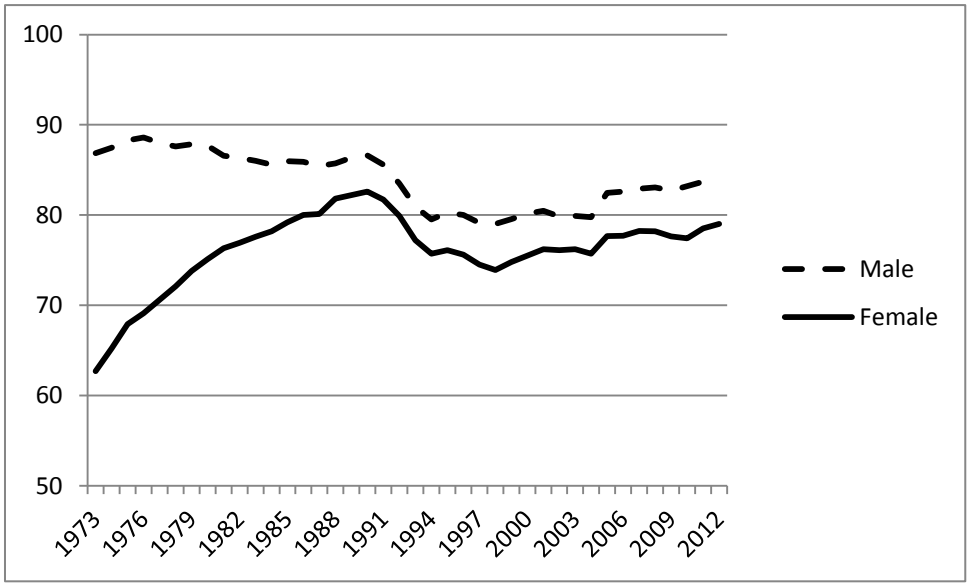
[22] See e.g. Becker (1985)
[23] Chevalier & Viitanen (2002)
[24] Goldin (2014)

In the next section we will take a closer look at what was considered the major cause of the gender wage gap for many decades: *Women lagging behind men in education and labor market experience.*

3 Women catching up on men – a descriptive analysis 1973-2012.

As already mentioned a common explanation to the gender wage gap has long been that women were lagging behind men in essentially all aspects related to the labor market. The differences between men and women, primarily in length and quality of work experience and level of education, seemed therefore as a plausible reason to women's lower pay relative men. The catch-up hypothesis, in its simplest form, stated however that the wage gap would, more or less automatically, start to disappear as soon as a narrowing between women and men in these respect were observed. We have already noticed from figure 1 a reduction in pay gap and it seems reasonable to suspect that this is a consequence of a gender convergence in the labor market. However, since the gender wage gap is far from closed the question remains whether the catching up effect is just a temporary phenomenon, has ceased to work or is counteracted by other factors? There is no simple answer to this but a closer look at the narrowing process is necessary. We will therefore start the descriptive exposé by illustrating the narrowing between men and women in *employment and education* during the period under study.

Figure 2: Female and male labor force participation rate 1973-2012. Sweden. Percent.



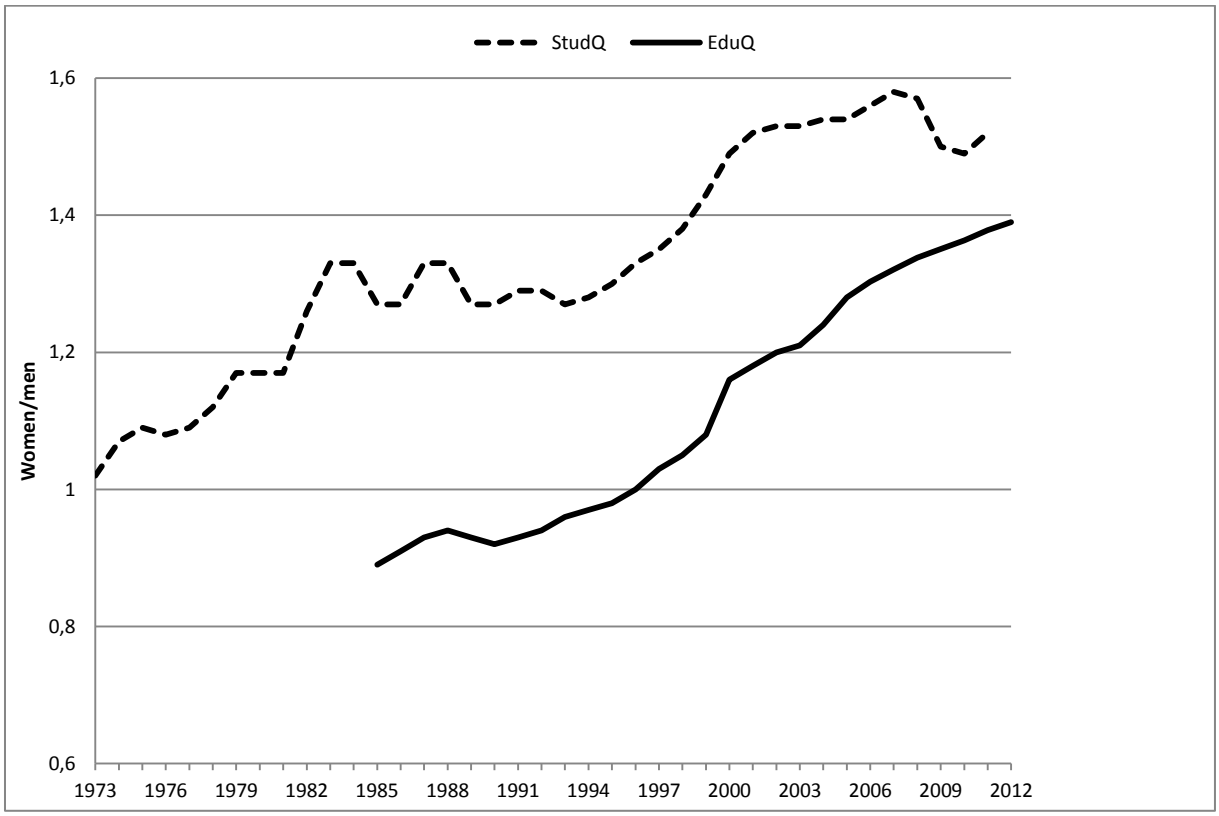
It is obvious that women catching-up on men in labor force attachment have been impressive. The female participation rate rose from around 50 percent at the beginning of the 1960s to 60

percent at the beginning of the 1970s and by the end of the 1980s it exceeded 80 percent.[25] The figures for men, on the other hand was constant or slightly dropping during the same period, mainly as an effect of lowering pension age and longer education. The drop in 1991-1994 was an immediate result of the deep economic recession those years. The employment-gap has been around 4-5 percent the last decades and compared to 25 percentage points in the beginning of the 1970s the narrowing has been substantial.

The education-gap is measured in two ways: The student quota (StudQ), refers to number of women in relation to men registered in post-secondary education. It is close to one, equal number, at the beginning of the 1970s but from then on the number of women continually exceeded the number of men and hence made the gap constantly growing during the whole period.

Figure 3: Female quotas (women/men) in education. Percent.

StudQ=Registered students in post-secondary education 1973-2012; EduQ=Population with a post-secondary education 1985-2012



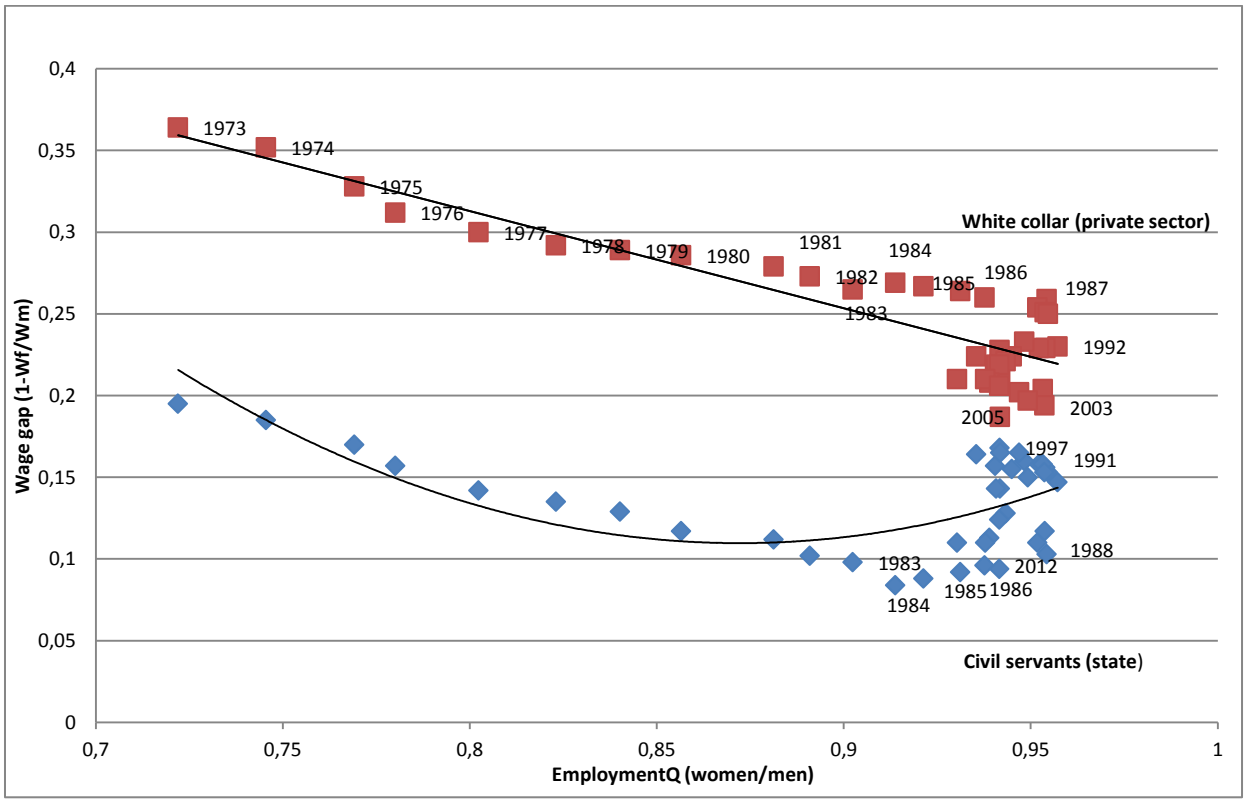
Attending higher education will also be manifest by its positive impact on the level of education in the population. The second measure is education quota, (EduQ) referring to

[25] Among women with children the participation rate was even higher.

number of women to men with a post-secondary education. Until the mid-1990s there were more men than women with a longer education in the population but in 1996 women had caught up on men and since then have outnumbered them. This trend will continue at least as long as the female student quota remains as high as it is today.

Figures 2 and 3 do, so far, support the catch-up hypothesis: (i) Women were lagging behind men and (ii) women have made tremendous progress in catching up on them. These are certainly important explanations to the shrinking wage gap, but it is as obvious that the catching up effect has not been sufficient to eliminate the gap completely. The next step in this analysis will therefore be to take a closer look at the wage gap related to female employment rate and student quota respectively. For simplicity this is done only for white collar employees in private sector and civil servant in state sector (see figures 4 and 5 below).

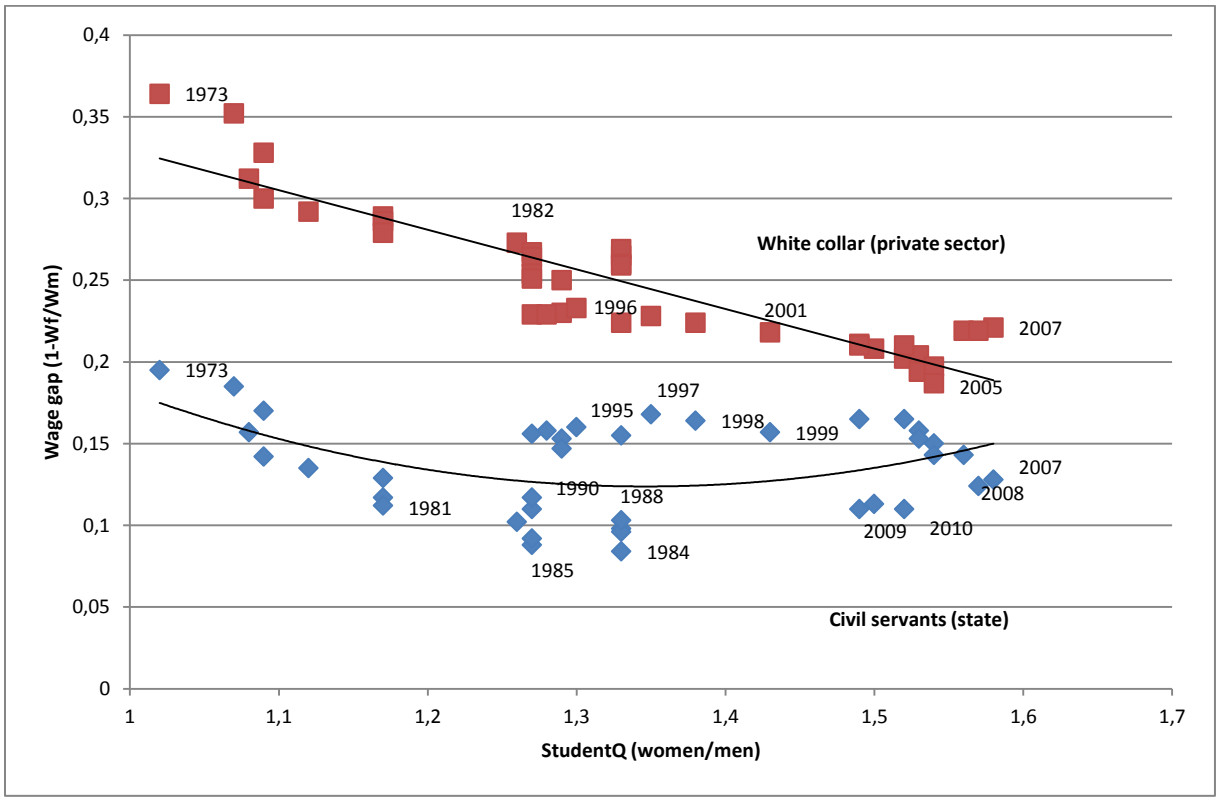
Figure 4: Gender wage gap in two sectors related to female employment quota (women/men) 1973-2012.



The higher the female employment quota (EmpQ), the smaller the gender wage gap at least among the white collar workers within the private sector. In the state sector this was only the case until beginning of the 1980s, after that the gender gap has been constant or slightly increasing. Already by the end of the 1980s the number of men and women on the labor market was close to equal, 0.95, but at that stage the wage gap was no longer shrinking; it was

substantial in the two groups but varying. Among white collar workers in private sector the gap varied between 18 and 26 percentage points and in the state sector between 10 and 15 percentage points. The uneasy up-ward trend in the state sector is though inauspicious, contrary to the largely downward trend in the private sector. A similar correlation is also found for female student quota and wage gap (see figure 5).

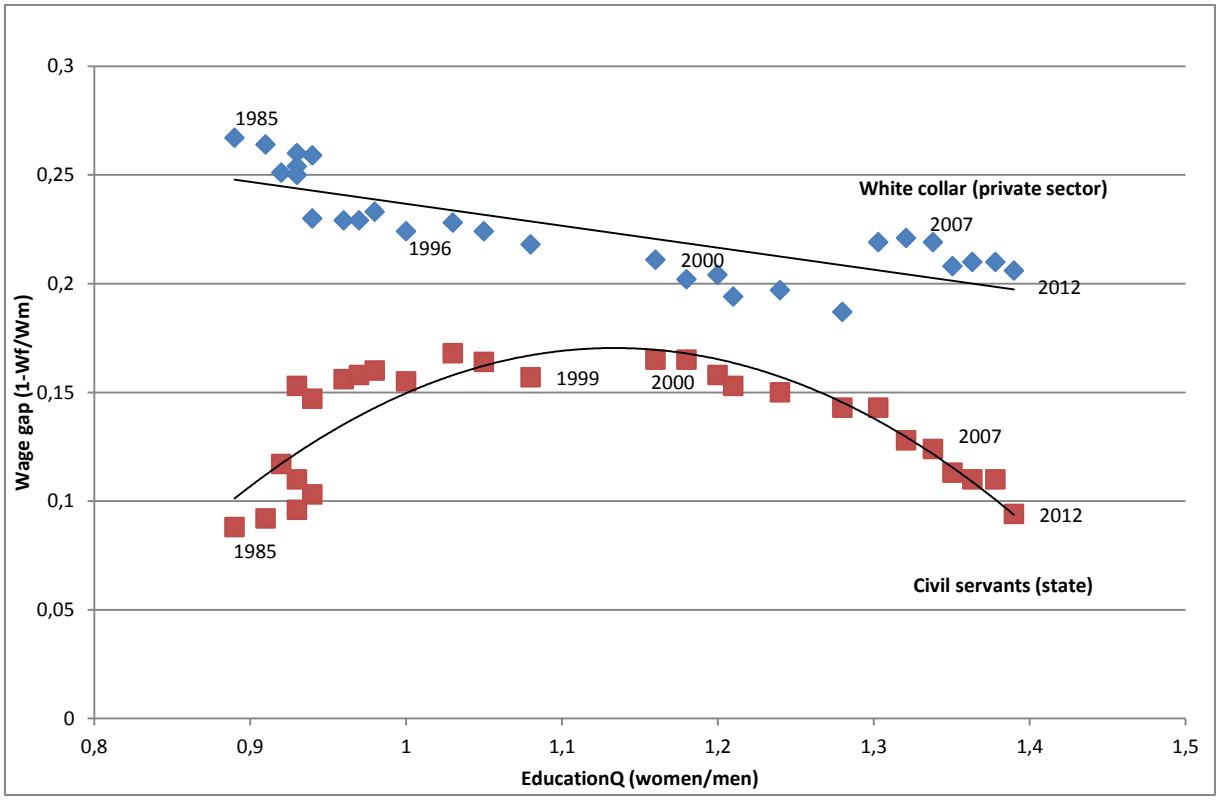
Figure 5: Gender wage gap in two sectors related to female student quota (women/men) 1973-2012.



The number of women and men registered in higher education was close to equal in the beginning of the 1970s but this gender balance was only ephemeral since it was gradually replaced by an ever stronger female dominance. As this dominance became stronger the gender pay gap decreased at least among white collar workers. Among the state sector workers this was also the case until middle of the 1980s but after that the up-ward trend made the development unclear.

A closer look at the actual level of education in the population during a somewhat shorter period than the previous one, 1985-2012, reveals another pattern for men and women in the two groups which figure 6 illustrates.

Figure 6: Gender wage gap in two groups related to female education quota in the population 1985-2012.



The gradual increase of female students was also offset in a changed relation between women and men with a post secondary education in the population. For this shorter period it was clear that until 1996 there were fewer women than men with a higher education in the labor market, but since then the situation is the reversed, women outnumber men with a higher education in the population. Looking at the pay gap the trend is clear among white collar workers: The gap is becoming smaller as the female education quota rise. The reduction though is hardly impressive, on average five (5) percentage points, during the period under study. Among the state employees the development is more mixed. During the first ten years, 1985-1996, the gap increased, after that followed a period of fairly stable wage gap and it is not until the beginning of 2000s the gap is actually decreasing.

The figures above illustrate differences and similarities in the two sectors but they do not say anything about causality. What are the actual driving forces here? Does a smaller gender pay gap make it more profitable for women to participate on the labor market and/or enroll in higher education or is it the other way around? Do more women on the labor market and/or women with higher education exercise pressure on employers and trade unions to negotiate

about more equal pay? There is no simple answer to this but the fundamental truth, as pointed out in the above descriptions, is that women catching up on men do not always coincide with a decreasing gender pay gap. If anything, also according to the description above, one may claim that this is true in the private sector but not in the state sector due to the latter's indecisive evolution of the pay gap.

Since women have improved their relative level of skills, as measured here, the narrowing of the gap in work-experience and education also makes it reasonable to believe that they have enhanced their level of unmeasured skills, as well. Increasing labor force attachment may for example have encouraged women to acquire more on the job training. Women's commitment to the labor force may also have improved their actual job skills, which may in turn have undermined the rationale for statistical discrimination.

The crucial thing about the description is, however, that women have not only caught up on men, they have also passed them. This raises a couple of questions, e.g. has women's catching-up been a necessary condition to prevent the wage gap to become even bigger than it is today? Another question concerns the difference between the private and the state sector. Why is the negative correlation more conspicuous in the private than in the public sector?

The description above has shown that the catch-up hypothesis is of relevance in this context. The gender wage gap has been decreasing as women, relative men, have become both more experienced and more educated. But since there still is a gender wage gap and it seems persistent, it may cast some doubts on its relevance today. Other factors may be more influential and/or they might be counteracting a presumed positive catch-up effect. One example may be the shift in Swedish wage policy, which occurred in the mid-1980s. The next section will identify some additional variables, which may be useful in this context.

4 Model and data

In the previous section the grand gender convergence was confirmed but also that the evolution has not resulted in a zero gender wage-gap. Is this a reason to dismiss the catch-up hypothesis? A way to found out more about this is to include other aspects on this issue as well. One approach is to widen the perspective, go beyond men and women, and look for factors and structural events which might have had an impact on this issue. The variables I will refer to here are presented below and for sake of simplicity they are sorted into four separate boxes.

The first "box" consists of the two catch-up variables already presented above: female employment quota (empQ) and female student quota (studQ). Their expected impact is accordingly positive, i.e. as women are approaching men the smaller the gender wage gap will be. The third variable in the box, *time*, goes without saying because if nothing else will change, a common notion is that "time" will settle the matter. Gradual changes in attitudes and prejudices towards women in general and working mothers in particular will, even if they are slow, most likely contribute positively to a smaller gap. One example, where "time" may serve as a proxy for a specific change of interest for the gender wage gap is the transformation of the labor market from very sex-segregated to less. This has been going on for decades now, it is a slow process indeed, and "time" may be an appropriate variable.

In the second "box" three different variables are used referring to the labor market situation each year. Unemployment rate (unemp), measured in total and for men and women separately. The expected effect of unemployment in general is that high make the gap larger and vice versa. A large number of vacancies (vac) on the other hand may indicate a prosperous economy and a growing labor market but it may also signal imbalances in supply and demand i.e. matching problems in the labor market. The expectation though is that plenty of vacancies ought to be beneficial for the supply-side and in that respect be positive for wage levels. However, their immediate impact on the gender wage gap is less clear. The last variable in the "box" is economic growth (growth). The expectation is that the higher the growth, the smaller the gap and vise versa. There is, however, no such guarantee what so ever. Economic growth may have a positive effect on both men's and women's earnings but depending on the size of the wage-increase the actual outcome for the groups separately may differ leaving the gap unaltered, smaller or larger.

The third "box" consists of two variables. The first is referring to the system for wage-setting (cent). The Swedish wage-system has evolved from centralized to a more decentralized. This transition started in the 1980s and by the end of the 1990s an intermediate system was in place, where both local and central negotiations were accepted by the social partners. One type of criticism of the old system was the idea of keeping the wage dispersion low. But, as already mentioned, this was a way to keep overall wage inequality low and as such its contribution to a smaller gender wage gap during the 1960s and 1970s has been documented. The expectation, though, is that a general increase in wage differentials may contribute to a

larger gap between men and women at least as long as the labor market is as sex-segregated as it is. One problem with this variable is, however, that this transition was a gradual process. No fixed date exists for when this transition was covering the whole labor market. We have therefore used a summary measure of centralization of wage bargaining, taking into account both union authority and union concentration at multiple levels.[26]

The second variable in the same box is the share of female union membership (UM_{fem}). It has gradually increased, following the evolution of the female labor force participation rate. The union density may have falling somewhat during the last 10-15 years in Sweden but it is still high among men and women irrespective of branch, sector and occupation. The expected effect of high density is positive i.e. a smaller gender wage gap.

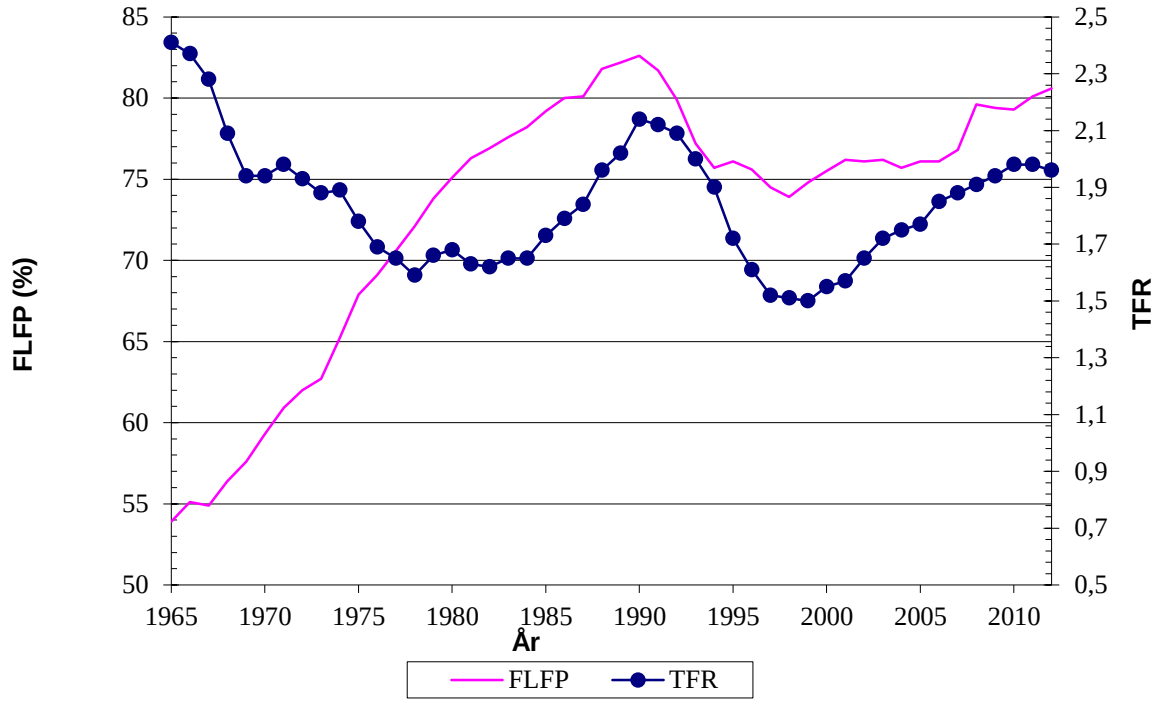
The last "box" consists of two variables closely related to the private life: fertility rate (fert) and women's age at first child birth (age). The total fertility rate (TFR) in Sweden has varied quite dramatically during the period under study. From the mid-1960s until the beginning of the 1980s the fertility rate dropped every year. This negative trend was, however, reversed during the 1980s when the rate rose rapidly. In the early 1990s the Swedish fertility rate was among the highest in Europe,[27] but after this peak the rate dropped again very quickly, mainly as a consequence of the economic recession at the beginning of the 1990s.[28] By the end of the 1990s the fertility rate was as low as it was during the 1930s' economic depression.[29] This negative trend was again reversed in the beginning of the 2000s and in a few years time the fertility rate was again among the highest in the Europe.[30]

The reasons behind these dramatic shifts vary but some "stand out" more than others e.g. considerable changes within the social infrastructure. The increase in the supply of *publicly subsidized childcare* speaks for itself. In the 1960s there were almost no supply, during the 1970s there was a gradual increase and by the end of the 1980s the supply of places in childcare centers were substantial, almost covering the demand. Naturally this was a tremendous change for women with pre-school children in particular, wanting to be part of the paid labor force.

[26] The description for this measure is presented in Visser (2013).
[27] TFR in Ireland and in Iceland was somewhat higher at that time.
[28] Löfström (2003)
[29] Total fertility rate in Sweden was at the beginning of the 1990s among the highest in Europe, 2.14, and at the end of the same decade it was 1.5. This figure was of the same size as the lowest so far, in the middle of the 1930s. (Two (2) is the level for reproduction.)
[30] In 2013 total fertility rate (TFR) in Sweden was 1.9.

Figure 7 summarize the historical impact this last change exerted in the case of Sweden. The normal thing, still found in many countries, was that fertility and female employment rate was negatively correlated: Rising female employment rate followed by falling fertility rate and vise versa was also the case in Sweden until the end of the 1970s but after that point of time the correlation turned out to be positive. Female labor force participation rate and fertility rate was no longer interchangeable. This marks a very important shift and mirror a new era where a place, a job in the labor market is most likely a necessary, if not always a sufficient condition, for a young woman before she will decide to become a mother.

Figure 7: Female labor force participation rate (FLFP) and total fertility rate (TFR) in Sweden 1965-2012.



Several studies on the gender wage gap have confirmed the negative impact presence of children has on women's wages. The question here is if this is visible in a long term macro perspective as well? If this is the case, the effect of rising fertility rate is expected to be negative, i.e. making the gap wider while the reverse will happen in case of falling fertility. However, according to the illustration above the opposite may be as plausible.

The second variable, age of women at first birth, is interesting since women on average are older today when starting a family than previous generations of women were. This is mainly a consequence of women spending more time on education and/or on labor market activities than before. The latter may also have been reinforced by the way the Swedish parental

insurance is constructed.[31] It encourages women to participate in the labor market before having the first child, partly because they will be assured to have a job to return to after the parental leave, partly because the paid parental leave will be more generous compared to not have participated. It is hard to tell what impact a postponing of child birth may have on the gender wage gap, but there are reasons to expect a positive effect i.e. it will make the gap smaller.

Empirical specification

The gender wage gap (gwg) is the dependent variable, in logarithmic form, and the independent variables are all continuous. All models are estimated separately for: (i) Blue collar workers in private sector (ii) white collar workers in private sector, (iii) civil servants in the state sector and (iv) municipality workers.[32]

The four separate models can be specified in the following way.

(1) $\ln(gwg) = \alpha_0 + \alpha_1 empQ + \alpha_2 studQ + \alpha_3 time + \varepsilon$

(2) $\ln(gwg) = \beta_0 + \beta_1 empQ + \beta_2 studQ + \beta_3 time + \beta_4 unemp_{fem} + \beta_5 unemp_{male} + \beta_6 vac + \beta_7 growth + \varepsilon$

(3) $\ln(gwg) = \gamma_0 + \gamma_1 empQ + \gamma_2 studQ + \gamma_3 time + \gamma_4 unemp_{fem} + \gamma_5 unemp_{male} + \gamma_6 vac + \gamma_7 growth + \gamma_8 cent + \gamma_9 um_{fem} + \varepsilon$

(4) $\ln(gwg) = \delta_0 + \delta_1 empQ + \delta_2 studQ + \delta_3 time + \delta_4 unemp_{tot} + \delta_5 vac + \delta_6 growth + \delta_7 cent + \delta_8 um_{fem} + \delta_9 TFR + \delta_{10} ageW + \varepsilon$

The models are estimated for the period 1973-2012.

A slightly modified version of model (4) is estimated for a shorter period: 1985-2012. In this model the two catch-up variables in box I are excluded. Women lagging behind men in employment are not considered an issue after 1985[33] and student quota will be replaced by female education quota (eduQ) i.e. female ratio of high educated in the population. A new variable, productivity (prod), is also included measured here as production per hour. The expected effect of more women in higher education is positive i.e. it will contribute to a smaller gender pay gap. The effect of rising productivity ought to be positive but this may be in general terms, its effect on the gender wage gap may be more problematic. Rising

[31] Parental insurance was introduced in 1974 replacing the (small) economic support directed to mothers only when having a baby. The fathers are now also included in the insurance.

[32] In this last group (iv) only those in primary municipalities are included. Employees in the secondary municipalities (landstingen) are not included i.e. medical doctors, nurses etc.

[33] This might be an over-simplification because more women than men are still working on a part-time basis and can therefore be regarded as "lagging behind" men.

productivity is expected to be transformed into higher wages, but whether this will make the gender gap smaller or not is an open question.

The empirical specification for the period 1985-2012 is:

$$(5)\quad \ln(gwg)=\theta_0 + \theta_1 eduQ + \theta_2 time + \theta_3 unemp_{tot} + \theta_4 vac + \theta_5 prod + \theta_6 growth + \theta_7 cent + \theta_8 fert + \theta_9 age + \varepsilon$$

Data are essentially from Statistics Sweden and the SPSS' regression analysis package has been used for the analysis. The results are presented in the section below.

5 Results

The gender wage gap measured as an average gap for the whole labor market is often criticized. The main argument is that no consideration is taken to men's and women's different characteristics and qualifications. Without denying these important aspects the crude measure used here may still be useful, provided that the *evolution of the gender gap* is of interest. However, as a way to mitigate the critics I do not use the average for the whole labor market but the average for the four dominate labor groups. As the wage gap varies a lot between them, already shown in the figures above, such a separation seems meaningful. The purpose of this study was threefold: (i) study the impact of women catching-up on men, (ii) find out the impact other factors may have exerted on the gender wage gap and lastly (iii) get an indication on what the next step must be in order to further reduce the gender gap.

The parameter estimates in the tables below are only presented by their signs since the main interest is concentrated on whether the variables have contributed to *decrease or increase* the gap. This makes the interpretation simple: A plus (+) indicates an effect which makes the gap *larger*, all else equal, while a minus (–) indicates the opposite. The results are presented in table 1a-1d below.[34]

[34] The complete results are found in the appendices.

Table 1a: **Blue collar workers 1973-2012.**

		(1)	(2)	(3)	(4)
BOX I	empQ	-*	-*	+	-*
	studQ	-*	-	-*	+
	time	+*	+	+*	+*
BOX II	$unemp_{fem}$		-	-	
	$unemp_{male}$		+	+	
	$unemp_{tot}$				+
	vac		+*	+*	-
	growth		-	-*	-
BOX III	cent			-*	-*
	um (% fem)			-*	-
BOX IV	fert				+*
	age at 1st birth (wom)				-*
	R^2 adj	*.71*	*.72*	*.89*	*.96*
	DW	*0.68*	*0.88*	*2.11*	*1.76*

*t-value >1.90

Table 1b: **White collar workers in private sector. 1973-2012.**

		(1)	(2)	(3)	(4)
BOX I	empQ	-*	-	+*	+
	studQ	-	-*	-*	+
	time	-*	-*	-*	+*
BOX II	$unemp_{fem}$		+	+*	
	$unemp_{male}$		-	-	
	$unemp_{tot}$				+*
	vac		+*	+*	+*
	growth		-	-	+
BOX III	cent			-	+
	um(% fem)			-*	-*
BOX IV	fert				-
	age at 1st birth (wom)				-*
	R^2 adj	*.92*	*.95*	*.97*	*.99*
	DW	*0.74*	*1.25*	*2.12*	*1,90*

*t-value >1.90

Table 1c: **State employees 1973-2012.**

		(1)	(2)	(3)	(4)
BOX I	empQ	-*	-*	-*	-*
	studQ	-*	-*	-*	-*
	time	+*	+*	+*	+*
BOX II	$unemp_{fem}$		-*	-*	
	$unemp_{male}$		+*	+*	
	$unemp_{tot}$				+*
	vac		-*	-*	-*
	growth		+*	-*	+*
BOX III	cent			+	+
	um (% fem)			+	+
BOX IV	fert				+
	age at 1st birth (women)				-
	R^2 adj	*.24*	*.75*	*.91*	*.86*
	DW	*0.20*	*0.94*	*1.79*	*1.65*

*t-value >1.90

Table 1d: **Municipality workers[a] 1973-2012.**

		(1)	(2)	(3)	(4)
BOX I	empQ	+	-	+*	+*
	studQ	-	-*	-*	-*
	time	-*	-	+	+
BOX II	$unemp_{fem}$		-*	-	
	$unemp_{male}$		+	+	
	$unemp_{tot}$				+
	vac		+	+*	+
	growth		+*	+	+
BOX III	cent			-	-
	um (% fem)			-*	-*
BOX IV	fert				+
	age at 1st birth (women)				-
	R^2 adj	*.90*	*.93*	*.95*	*.96*
	DW	*0.46*	*0.81*	*1.55*	*1.63*

[a]Secondary municipalities (landstingen) not included. *t-value >1.90

Table 1a-1d shows mixed results. The results for model (1) and (2) exhibit some similarity with a visible catch-up effect in all but one group. Rising employment rates and higher female student quota have, as expected, negative signs indicating a smaller gap. Adding more variables to the model, (3) and (4), the catching up effect became less pronounced since it is

only in the state sector the two estimates are consequently negative and significant. Although the catch-up effect is dominant in all models an interesting piece is that the effect of "student quota" is more often as expected as it is for "employment quota". In the former case 14 out of 16 estimates were negative, whereas ten were significant, while in the latter case ten was negative of which eight were significant. This might give a hint on the role level of education may have in combating the wage gap.

The economic variables, box II, in model (2) were all significant in the state sector while just a couple were significant in the other groups. The interpretation is not always straightforward. More vacancies will apparently contribute to a larger gap in three out of four occupational groups while economic growth will make it smaller in the private sector and larger in the public sector. The latter may perhaps be a result of the outcome of wage negotiations where men have been more successful than women. Some will probable say that women are not as good as men to negotiate over their own salaries. The effect of unemployment on the gender gap differs. In all groups, with exception for white collar workers, rising female unemployment may reduce the gap while male unemployment rate make the opposite. This seems contradictory but, if the ones losing their jobs are primarily low paid and those keeping their jobs are better paid this might be a reasonable explanation.

In model (3) a measure on central wage negotiations and female trade union density was included. The estimates are negative in all groups but one, indicating that a higher degree of centralization and more women in the unions makes the gap smaller. The exception here is the state sector since a positive estimate, although insignificant, indicates the opposite. In the last model (4) total unemployment rate replaced the gender specific rates and it is obvious that high unemployment in general makes the gap larger, the estimates are positive in all groups although not always significant.

The two family related variables, fertility rate and age of women at first birth, performed mixed results. The main impression is though: The higher the fertility rate the larger the gap and the older the woman is at first birth the smaller the gap all else equal. However, this was more evident for the latter variable than the former. The negative age-estimates in all groups is of course interesting and indicates something previously less discussed: The consequences of for example deliberately postponement of motherhood, of women's rising interest for higher education and the development of the gender equality in general. I will come back to this.

At last, it is often said that "time" settle most "problems" but in this particularly case "time" seems not to be a trustworthy partner. Among white collar workers it may, to a certain degree, be true but not in the other groups. Among employees in the state sector all estimates were positive and significant and among blue collar workers three out of four estimates were positive and significant indicating that the gender pay gap did increase not, as expected, decrease as "time went on", all else equal. Among municipality workers the time-effect was more undecided.

What would this and other variables tell if the period under study was shorter? The reason to shorten the period is that the reduction in the gender wage gap stopped in all groups in the beginning of the 1980s (see figure 1). Another reason is that we can include a new variable, productivity, and replace student quota with education quota in the model. The result of this is presented below.

Table 2: **Gender wage gap 1985-2012.**

Blue collar workers (BCW); White collar workers (WCW); State employees (SW); Municipality workers (MW)

		BCW	WCW	SW	MW[a]
BOX I	eduQ	-	-	-*	-*
	time	+	+	+*	+
BOX II	$unemp_{tot}$	+*	+	-	-
	vac	+	+*	-*	+*
	productivity	+*	+	-	+
	growth	-*	-	-	-
BOX III	cent	-	+	+*	+
BOX IV	fert	+	-	+	+
	age 1st birth	-	-*	+*	+*
	R2 adj	*0.75*	*.91*	*.94*	*.95*
	DW	*2.61*	*2.72*	*1.86*	*2.50*

[a] Secondary municipalities (landstingen) not included. *t-value >1.90

The signs of the estimates are in many ways similar to the previous ones and the significant results are few. The estimates have equal signs in three cases: More women in the population with higher education and economic growth have contributed to a smaller gap during the period under study while the estimate for the time-variable displays the opposite effect. Accepting three estimates with similar signs as reasonable we may extend this and conclude

that number of vacancies, productivity and rising fertility may also have contributed to make the gap larger, at least not smaller, during the period. Overall the regression analysis have given more "+" signs than "-" signs which makes the gender wage gap more problematic and the solutions not as simple as one could expect.

6 Discussions

The focus in this paper has been the *evolution of the gender wage gap* in Sweden during the last forty years and what impact different factors may have exerted on the gap. The reason to choose this angle was the long-lasting explanation to the gender wage-gap: *Women lagging behind men in labor market experience and level of education*. The last forty years has shown a grand gender convergence in these two respects but the implication for the gender pay gap has not been as grand. Men and women are still rewarded unequally, and although the findings in this study are mixed and in many cases inconsistent there are some indications on what matters for the average gender gap. For sake of simplicity the estimates with equal signs in at least three groups, significant or not, are summarized in the table below.

Table 3: Summary table 1973-2012 (Tab 1 mod (4)).

Blue collar workers (BCW); White collar workers (WCW); State employees (SW); Municipality workers (MW)

	BCW	**WCW**	**SEW**	**MW**
Decreasing gap:	AgeW*	AgeW*	AgeW	AgeW
	Union	Union*		Union*
Increasing gap:	Time*	Time*	Time*	Time
	Unemp	Unemp*	Unemp*	Unemp
		Growth	Growth*	Growth
	Fert*		Fert	Fert

Obviously there is higher degree of consistency among factors increasing than decreasing the gap. This is of course troublesome and especially that the time variable belongs to this group. More research about this is needed before any firm conclusion is possible to draw.[35]

The results for the two variables with a clear gender dimension, women's age at first birth and fertility rate, deserve however special attention. I will therefore end by some reflections about gender roles and gender equality and their impact on the pay.

[35] See Goldscheider et al (2013) about attitudes and expectations on sharing of household tasks and child care among men and women in Sweden.

The family, irrespective it is *under construction, under enlargement or is going to break up*, is in most studies found to be more of a problem for women than for men when it comes to labor market related issues such as pay and careers. Motherhood is still a hindrance to young women's careers with long-lasting consequences. However, in our case it seems as the *age of the woman at first birth* may mitigate this negative effect. The older she is at her first birth the smaller the gender gap and vise versa. The reason for this, out of women's perspective, may vary but it seems reasonable to assume that "older" first-time-mothers are more experienced and more educated. They are probably also better informed and prepared to look after their rights, towards the employers, than younger ones are when they get pregnant and step into motherhood for the first time. A third reason may also be that the probability is higher that an "older" first-time mother is living in a relationship where gender equality, equal sharing of both paid and unpaid work, is more prevalent than among "younger" parents.

From the employers' perspective, on the other hand, an older first time mother may also be seen as less of problem within the firm and a period on leave, due to child care, will therefore be less costly to the employer. Her competence is "worth waiting for" and the longer she has been with the employer the more valuable she might be and the lower interest for the employer to "punish" her in case of motherhood. Another positive effect, out of the employers' perspective, is that there are natural limits on number of children and starting late may, most likely, indicate fewer children.

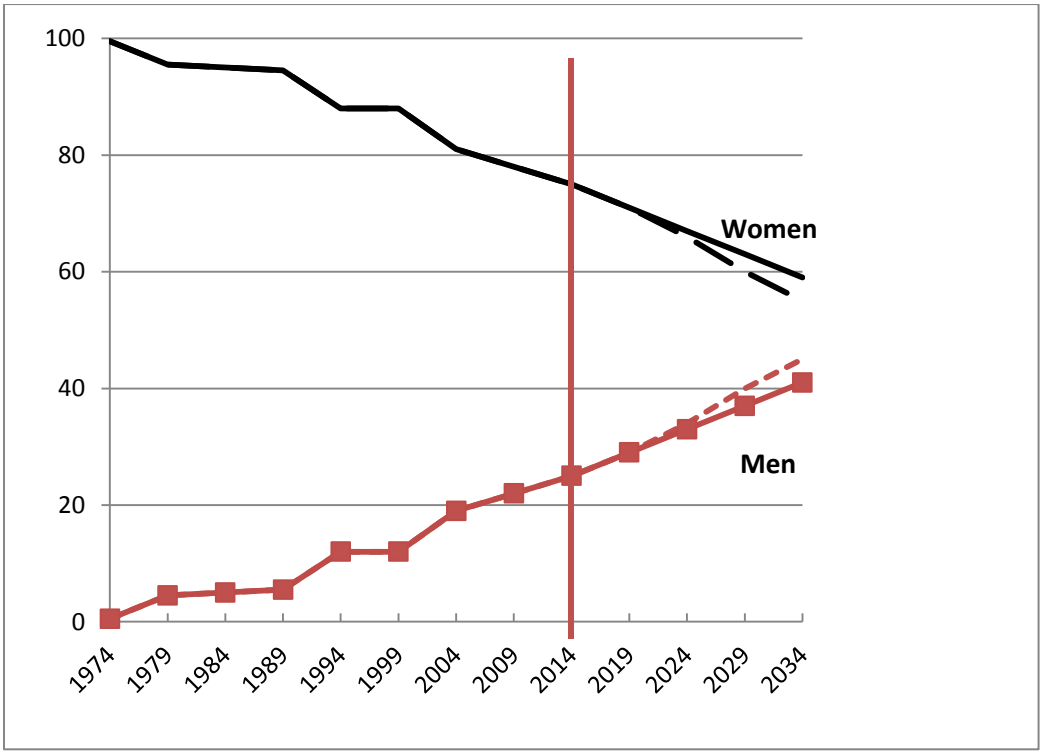
If the age of the first time mother may influence the wage gap by reducing it, the fertility rate will do the opposite. Although the level of significance for the estimates is low the message is clear. This is in line with previous findings, the "cost" of having children have always been higher for women than for men. Women may have mitigated the negative effect through constantly "catching up" on men, but now is the end of that road reached. Something new is needed in order to further reduce the gender gap. The natural question is therefore whether it is about time for men to *catch up on women*?

Men are still lagging behind women when it comes to time spent on children and other household duties. This will, most likely, not be sustainable in a long-term perspective. The convergence between men and women in this respect has started but the differences are still huge. One reason, often referred to, behind the uneven division is the actual gender wage differentials there are. As long as women's earnings are lower they will, on average, perform more unpaid household work and as long as they keep doing it they will continue to receive

lower income. One way to break this vicious circle is to encourage and maintain the fathers' emotional commitment to the children direct from the start.

If the economic incentives were obvious for women to be part of the paid labor force, the incentives for men to take part in the household work is almost non-existent. It is therefore necessary to broaden the concept of rewards and include non-pecuniary ones as well. The benefit of having a close relationship to own children from an early stage must be clarified. A growing number of men have already experienced the backlash of not participating e.g. in case of divorce. The "fight about children" has been devastating for many families and for many fathers this has been a wake-up call. A way to avoid custody fights in the future may be to take part right from the start - through sharing the *emotional and economical* responsibility for children and household. The Swedish parental insurance, introduced in 1974, offered this opportunity from start. However, equal sharing was hardly an issue 40 years ago. The figure below gives a snapshot of the process of development so far, and a preliminary forecast for the coming years.

Figure 8: The convergence in parental leave (percent of days) between parents.



The paid parental leave was in the beginning 180 days, 90 days to the mother and 90 to the father with the option to transfer days to the other parent. Most fathers transferred their days to the mothers. Today, 2014, the full paid days are 480 whereas 60 days are *not* transferable to

the other parent. The introduction of the two daddy-months, 1995 and 2002, have certainly helped to increase the fathers' share but still fathers on longer leave is uncommon. Mothers are still using the lion part, 75 percent. A rising interest among the fathers themselves and expectations on future fathers from the public in general may help to make fathers' periods of leave a normal thing. A very simple forecast where the future evolution proceeds at the same speed as previous periods shows that in approximately twenty years the sharing of parental leave may lie in between 40 to 60 percent, i.e. the definition of gender equality (solid line in the figure). With a third daddy month this may be reached within 15 years (dotted line). Whether this seems reasonable or not I leave to reader to judge.

The paper started with a reference to the introduction of the individualized tax-reform in the beginning of the 1970s, a reform that was essential for women's liberation. From being primarily unpaid and economically dependent they became an active part in the paid labor force. It is interesting to remember though, as mentioned above, that this change was preceded by a long time of discussions between and within groups, pro and against the tax-reform. The present discussions about the future family policy seem to be in the same stage at the moment as the arguments, pro and against equal sharing of parental leave, are in many cases the same. However, the substantial difference is that *men, not women,* are in focus this time. It is my belief that men, for many reasons, will catch up on women in the family related businesses and when they do the *economic gender-balance* in the labor market will also be possible to reach. Although I am convinced that this is a necessity I am not as convinced that it will be a sufficient condition and referring back to Goldin a lot remains to be done within the labor market and the firms as well.[36]

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[36] Goldin (2014)

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Appendices

Table A1a Blue collar workers 1973-2012 (standard errors within brackets)

	(1)	(2)	(3)	(4)
empQ	-1.77	-1.85	1.59	-2.25
	(.312)	(.426)	(1.68)	(1.053)
studQ	-.772	-.487	-.822	.022
	(.256)	(.357)	(.283)	(.216)
time	.010	.006	.014	.036
	(.004)	(.006)	(.005)	(.010)
unempFem		-.037	-.029	
		(.033)	(.026)	
unempMale		.043	.045	
		(.032)	(.025)	
unempTot				.013
				(.008)
vac		.000	.000	-.000
		(.000)	(.000)	(.000)
growth		-.011	-.019	-.006
		(.007)	(.007)	.005)
cent			-3.18	-1.31
			(1.03)	(.652)
unionFem			-.076	-.010
			(.028)	(.018)
fert				.196
				(.074)
age at 1st birth (wom)				-.252
				(.076)
Constant	-19.45	-12.24	-25.59	-63.74
	(6.8)	(11.49)	(9.0)	(18.42)
R^2adj	*.71*	*.72*	*.89*	*.96*
DW	*.68*	*.88*	*2.11*	*1.76*

Table A1b White collar workers 1973-2012 (standard errors within brackets)

	(1)	(2)	(3)	(4)
empQ	-.787	-.290	1.88	.928
	(.178)	(.196)	(.731)	(.632)
studQ	-.199	-.333	-.294	.206
	(.146)	(.164)	(.123)	(.129)
time	-.008	-.008	-.006	.015
	(.002)	(.003)	(.002)	(.006)
unempFem		.022	.025	
		(.015)	(.011)	
unempMale		-.013	-.008	
		(.015)	(.011)	
unempTot				.015
				(.005)
vac		.000	.000	-.000
		(.000)	(.000)	(.000)
growth		-.001	-.001	.000
		(.003)	(.003)	(.003)
cent			-.488	.180
			(.448)	(.391)
unionFem			-.043	-.030
			(.012)	(.011)
fert				-.059
				(.044)
age at 1st birth (wom)				-.199
				(.046)
Constant	14.80	14.44	11.65	-26.54
	(3.88)	(5.27)	(3.91)	(11.05)
R^2adj	*.92*	*.95*	*.97*	*.98*
DW	*.74*	*1.25*	*2.12*	*1.90*

Table A1c State employees 1973-2012 (standard errors within brackets)

	(1)	(2)	(3)	(4)
empQ	-1.949	-4.919	-4.634	-6.133
	(.734)	(.582)	(2.23)	(3.02)
studQ	-1.278	-.973	-1.74	-1.637
	(.603)	(.487)	(.375)	(.620)
time	.026	.038	.055	.059
	(.008)	(.008)	(.006)	(.029)
unempFem		-.219	-.137	
		(.045)	(.034)	
unempMale		.142	.074	
		(.044)	(.033)	
unempTot				-.042
				(.022)
vac		-.000	-.000	-.000
		(.000)	(.000)	(.000)
growth		.030	.015	.029
		(.010)	(.009)	(.015)
cent			1.237	2.792
			(1.367)	(1.872)
unionFem)			.000	.038
			(.037)	(.051)
fert				.231
				(.211)
age at 1st birth (wom)				-.060
				(.219)
Constant	-50.78	-71.06	-105.54	-113.505
	(16.02)	(15.69)	(11.92)	(52.88)
R^2adj	*.24*	*.75*	*.91*	*.86*
DW	*.20*	*.94*	*1.79*	*1.65*

Table A1d Municipality workers 1973-2012 (standard errors within brackets)

Secondary municipalities (landstingen) not included.

	(1)	(2)	(3)	(4)
empQ	.415	-.314	4.904	3.713
	(.428)	(.521)	(1.80)	(1.784)
studQ	-.634	-.880	-1.682	-1.101
	(.352)	(.436)	(.302)	(.366)
time	-.023	.013	.008	.026
	(.005)	(.007)	(.005)	(.017)
unempFem		-.102	-.028	
		(.041)	(.027)	
unempMale		.070	.032	
		(.040)	(.027)	
unempTot				.014
				(.013)
vac		.000	.000	-.000
		(.000)	(.000)	(.000)
growth		.024	.007	.009
		(.009)	(.007)	(.009)
cent			-1.283	-.047
			(1.103)	(1.105)
unionFem			-.099	-.077
			(.030)	(.030)
fert				.060
				(.125)
age at 1st birth (wom)				-.197
				(.129)
Constant	43.90	25.38	-14.64	-47.70
	(9.35)	(14.05)	(9.61)	(31.22)
R^2adj	*.90*	*.93*	*.95*	*.96*
DW	*.46*	*.81*	*1.55*	*1.63*

Table A2 Gender pay gap **1985-2012**.
BCW=blue collar workers, WCW=white collar workers, SW=state workers, MW=municipality workers. (Standard errors within brackets)

	BCW	WCW	SW	MW
eduQ	-4.53	-.096	-12.48	-14.36
	(2.63)	(1.75)	(2.92)	(3.58)
time	.017	.007	.083	.043
	(.018)	(.012)	(.020)	(.024)
unempTot	0.017	.010	-.012	-.001
	(.008)	(.005)	(.009)	(.011)
vac	.0001	.0002	-.0003	.0005
	(.000)	(.000)	(.000)	(.000)
productivity	.007	.002	-.002	.001
	(.002)	(.002)	(.003)	(.003)
growth	-.025	-.004	-.003	-.004
	(.009)	(.006)	(.010)	(.012)
cent	-.170	2.57	10.13	1.63
	(2.41)	(1.61)	(2.67)	(3.27)
fert	.051	-.086	.196	.154
	(.139)	(.093)	(.155)	(.189)
age at 1st birth (wom)	-.137	-.217	.531	.489
	(.103)	(.069)	(.115)	(.141)
Constant	-29.16	-10.92	-172.96	-88.19
	(32.92)	(21.97)	(36.61)	(44.86)
R^2adj	*.75*	*.91*	*.94*	*.95*
DW	*2.61*	*2.72*	*1.87*	*2.50*

Table A3: Summary table for the two periods and for private and public sectors separately.

	1972-2012		**1985-2012.**	
	Private	**Public**	**Private**	**Public**
time	+	+	+	+
unempTot	+	+	+	-
age at 1st birthWom	-	-	-	+
studQ	+	-	..	..
eduQ	..	..	-	-
growth	?	+	-	-
fert	?	+	?	+
union	-	?	..	..
vac	?	?	+	?
cent	?	?	?	+
productivity	..	..	+	?
empQ	?	?	..	..

Gender wage gap: minus=smaller; plus=larger; ? = (+) and (–) within the same sector