The Political Glass Ceiling*

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February 20, 2014. Preliminary work, please do not cite.

Abstract

A common view is that women are under-represented on the top positions in organizations because they have not yet accumulated enough experience to qualify for these jobs. We use panel data for 36,000 Swedish local politicians and examine which of these men and women that are nominated to top positions in 2,000 political organizations and over six election periods. We find that women are substantially less likely to be appointed to top positions for the same length of experience in elected office. Their disadvantage is also greater for more influential top positions compared to less influential ones. We also find that gender differences in qualifications (age, education, and experience from the national parliament) and family responsibilities (family size and births of new children) cannot account for this difference. We conclude that as long as women’s rewards to experience fall far below men’s, time will not solve the problem of vertical inequality. Efforts to crack the glass ceiling should also address solutions beyond raising women’s qualifications or facilitating family-work balance.

Keywords: Careers in politics, Glass Ceiling, Supply of politicians

* Financial support from the Swedish Research Council, and the Torsten and Ragnar Söderberg Foundation is gratefully acknowledged.
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Introduction

A common explanation for the scarcity of women on the apex of power in business and the professions is that women are under-represented in the pool of qualified candidates for these positions. In politics, seniority - the accumulation of political credentials and skills through serving as an elected representative - is key for advancement in most parliamentary systems (Fenno, 1973; Matthews, 1960; Norris, 1997).\(^1\) The fact that women are newcomers to world’s legislative bodies has therefore been forwarded as a key explanation for their under-representation at the top ranks (Rodrigues, 2003; Kobayashi, 2004). From this viewpoint, the future looks bright. By simply waiting for the more recent and gender equal generations of politicians to rise to the top, we will automatically see women catch up to men.

In this paper we critically analyze if the passing of time will be enough to ensure vertical equality. We do this by examining if there is a gender difference in how political experience is rewarded. We focus on Sweden and extend the studies of political promotions to a novel type of empirical framework. Instead of examining the characteristics of men and women who have already been appointed to top positions, we analyze which politicians are picked from the pool of eligible candidates. This allows us to estimate the gender difference in the likelihood of rising to the top for men and women with the same seniority level. Importantly, if more experience is required of women than of men, vertical inequality will remain even in a context of perfect numerical parity.

As the world leader in female legislative representation, Sweden is a highly appropriate case study for rewards to seniority. Women reached 32% representation in parliament in 1985 and pushed above the 40% mark a decade ago in the 1994 election. The average share of women in the 290 municipal councils also crossed the 40% mark in this same year. In Sweden, women have hence been around in the political assemblies for long enough to give us ample data for examining the rewards that they have received for their accumulated seniority. In this sense, our study can provide insights into the path which is being tread by other countries in the world.

We use unique panel data for all politicians who have been listed on any electoral ballot in all of Sweden’s municipal elections since 1988. This panel data was created by Statistics Sweden by connecting each politician who appeared on a list at least once to extensive data on political appointments and socioeconomic characteristics from the administrative records of the Swedish state and for every year between 1988-2010. For the last two elections we can pinpoint exactly which person holds each of four types of top positions: 1) the top slot on the party ballot; 2) the position as chair of the municipal council (the equivalent of mayor); 3) the position of committee chair; or 4) a full-time political job. For every year and election we know the politician’s list rank, his or her number of preferential votes and their number of children, education level, age, income, occupation, and place of residence. Importantly, our data come from the administrative records of the state and hence is neither self-reported nor containing any missing data.

\(^1\) see also Blondel 1987; Davis 1997; Kobayashi 2004. Hagevi, 2010, shows the seniority is key for appointments in the Swedish parliament. In some countries, like Latin America, research has indicated that seniority is less important (Escobar and lemon, 2005; Morgenstern and Nacif 2002; Schwindt-Bayer 2005, Heath et al., 2005).
Our main analysis is to compare if men and women with the same level of political seniority, measured as the number of periods served in office since 1988, have different probabilities of holding top positions in the two latest election periods. This approach means that we focus on the promotion decisions by municipal political parties. Sweden has list-based proportional representation where seats in the elected assemblies are awarded to political parties in proportion to their vote share. A council board (the executive branch) is then formed by indirectly appointed politicians from each party. The chair of this board (the mayor) is appointed by the largest party in the governing majority, and the vice chair is appointed by the largest minority party. Both these positions are full-time appointments and offer substantially more influence compared to the part-time councilors (Wide, 2006; 2011). Our data captures every appointment of these critical actors in every local party, and we also capture every appointment to the top slot on a party ballot, a comprehensive proxy for the political leader in each of the party organizations (Folke et al., 2013).

Quantifying if there is a gender difference in rewards to seniority is important in itself. Finding out why such a difference exists is however key to making relevant advice for how to address this inequality. We evaluate two mechanisms that could contribute to differential rewards for equally senior men and women. The first is that women are less qualified for top positions in some other regard than experience in the elected assembly. Following the literature we capture such qualifications by age, education, and experience as a parliamentarian. Our second mechanism is that women’s careers are more constrained by family responsibilities than men’s are. Because we have data on the birth year of every child to every politician in our dataset, we can control for the presence of children in the household to find out of children hold women back from promotion to time consuming top appointments.

The article proceeds as follows. The first section reviews the related literature. In the second section we give a brief overview of the local political institutions in Sweden. In the third section we detail the methods and describe our dataset. The fourth section presents the results and the final section concludes.

**Related Research and Background**

Barriers to women’s participation in the labor market and their advancement to leadership positions are generally viewed as a key to improved human welfare (United Nations, 1995; World Bank, 2012). In many parts of the world, women have overtaken men in tertiary education enrollment and have made significant advances in labor force participation. The U.S Bureau of Labor Statistics reported in 2009 that women constituted 51% of all workers in high-paying management, professional, and related occupations\(^2\). In politics, women’s share of the world’s parliamentarians has increased dramatically in recent decades, driven by social and cultural change, but also by explicit affirmative action such as gender quotas.\(^3\)


\(^3\) This literature is too large to survey here, although prominent examples include see Rule, 1987, Reynolds, 1999, Tripp and Kang, 2008, and Krook, 2009
The improvements in women's education and labor force participation have not translated into any significant gains in the presence of women in leadership. In the corporate sphere as well as in the political sphere, female representation falls with seniority. In Europe, women comprise 45% of the labor force, but only 11.9% of companies' boards of directors. The percentage of women on such boards further drops to 9.9% in the Americas, and down to 6.5% in the Asia-Pacific region and 3.2% in the Middle East and North Africa (Pande and Ford, 2012). In politics, women held 19% of the world's 252 executive posts - slightly less than seven percent (Jalalzai, 2013).

Work in various fields has made the intuitive link between women's under-representation on top positions to their absence from the pool of qualified candidates for these positions. In political science, numerous studies hypothesize a positive relationship between the percent of female legislators and women's access to influential positions (Davis 1997; Reynolds 1999; Siaroff 2000; Heath et al., 2005; Krook and O'Brien, 2011; Escobar and Lemon, 2005; Jalalzai, 2008). With more women in the pipeline, more women are able to compete for higher offices, or succeed men if an opening presents itself.

Expecting a cumulative effect of women's presence in politics on their access to top positions over time follows on basic characteristics of the promotion process in any organization. Although outside recruitments to top positions occur, careers usually build on experience gained within the organization itself. That seniority is a basic criterion for advancement is a stylized fact that applies to most parliamentary systems in the world (Fenno, 1973; Matthews, 1960; Norris, 1997; Hagevi, 2010). On the most basic level, rewarding longer experience in office with more powerful appointments is motivated by the parties' essential needs to reward loyalty and retain party discipline (Davids, 1997). It also lets parties make promotion decisions based on evaluations of politicians' performance in office and provides transparency in this process (Norris, 1997).

There is little work that has examined rewards to seniority from a gender perspective. Heath et al. (2005) study parliamentarians' committee assignments in six Latin American countries, but their sample consists only of women. In this sample, they nevertheless hypothesize that "the more terms a female legislator has served, the less likely she will be relegated to women's issues and social issues committees and the more likely she will be placed on power and economics/foreign affairs committees." The authors do not find a statistically significant correlation between the number of periods served and these measures of influence. Notably, this result can imply either of a weak role of seniority in general, or it could be evidence of a situation where men, but not women, are rewarded for their experience.

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4 The share of women CEOs is also very low. As summarized by Pande (2012): "Despite the increase to over 50% women currently working in high-paying management and professional positions in the U.S., 23 percent of those female CEOs in the Fortune 500 companies only increased from 2.2% in 1995 to 3% in 2009. While women constitute 15.2% of board directors in the U.S. and 12.2% in the UK, the percentage of women directors in the top companies (Fortune 500 and the FTSE 100) increased by less than 0.5% average per year over the last 10 to 15 years."

5 see also Blondel 1987; Davis 1997; Kobayashi 2004; Norris 1997. Hagevi, 2010, shows the seniority is key for appointments in the Swedish parliament. In some countries, like Latin America, research has indicated that seniority is less important (Escobar and Lemon, 2005; Morgenstern and Nacif, 2002; Schwindt-Bayer 2005; Heath et al., 2005).
There are several strands of related research that can give insights to reasons why women may have longer paths to promotion than men. The division of labor in the household, where women bear a larger burden of the caretaker activities, is viewed as a major stumbling block to women's career investments in all areas of the economy. Family responsibilities are expected to crowd out women's time for political work, constricting the supply of female candidates, but parties may also be reluctant to select women with children (Norris and Lovenduski, 1997).

Another reason for slower careers among women could be that women are less qualified than the men have equally long experience. For example, if women enter into politics at a later average age than men they may not be in the "right" age bracket when they reach the necessary level of experience (Davids, 1997). Other qualifications could include a lack of formal education, the most commonly used measure of qualifications in empirical political science work, argued to capture enhanced practical skills, signaling ability, or civic engagement (De Paola and Scoppa, 2011; Besley and Reynal-Querol, 2011; Galasso and Nannicini, 2011; Ferraz and Finan, 2011, Schwindt-Bayer 2011; Franceschet and Piscopo, 2012, Baltruite et al. 2012).

Women's own ambitions and aspirations could cause them to fall behind. It has been argued that women "shy away from competition" due to the observation that women self-select into less competitive environments in lab experiments (Gneezy et al., 2003; Niederle and Vesterlund, 2007). This explanation is sharply contradicted by recent empirical evidence that recruitment to top positions in political parties is substantially more gender equal under fierce electoral competition (Folke and Rickne, 2013). In the Swedish case, surveys among politicians have that the gender difference in career ambitions for higher political office is negligible (Öhberg, 2011). Survey evidence covering 80% of all municipal politicians in 2012 also showed that men only expressed the wish to stay marginally longer in political office than women (Folke and Rickne, 2013).

A key insight from the literature on gender differences in ambitions is that ambitions are endogeneous to the recruitment efforts made by elites in the organization. In their work on women in pipeline professions in the US, Fox and Lawless (2010) can fully explain the gender gap in ambitions to run for political office by the occurrence and intensity of parties' recruitment efforts. Niven's (2010) conducted interviews with female politicians and recruiters in U.S. local political parties and concerning nominations for higher office. His results paint a picture of a clear gender bias in this of promotions and encouragement. Among the female politicians, 64% reported that party leaders actively discouraged potential women from running for higher office and 42% had personally been the subjects of such discouragement. Among recruiters, the men were considering fewer female candidates for future races than the women, they had more than twice as many male candidates in mind, and they were about three times more likely to list a man as their top candidate.

The endogeneity of ambitions highlights the general problem that "qualifications" for higher office exist in the eye of the recruiter. Their subjective valuations of merit are the consequence of

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6 In OECD countries, women spend about 2½ hours more than men on unpaid work (including care work) each day, regardless of the employment status of their spouses (Aguirre et al., 2012).
characteristics being filtered through their own personal preferences, as emphasized by Norris and Lovenduski (1995). Studies on recruitment in the corporate sphere have emphasized the importance of similarities in socioeconomic characteristics with the in-group (perceiver) in attitudes, values, and personality for promotions (Lipman-Blumen, 2000; Piliavin, 1987). These similarities, in turn, lead to an assumption of competence in a way that is clearly gendered (Klahr, 1969; Holgersson, 2003; Schlozman, et al. 1995). Casas-Arce and Saiz (2011) find that heavily male-dominated parties which were forced to raise the share of elected women due to a gender quota benefitted from this recruitment change in by more votes in the election. This is an indication that the preferences of the recruiters were not aligned with the true qualifications of the politicians in terms of maximizing votes.

Direct support of voters is surely an important qualification for higher political office (Norris and Lovenduski, 1995) and one where we expect men to hold an advantage. Regarding voters' preference for men among their political representatives, the literature has shown a positive preference relative women in some countries, no gender difference in others, and an advantage for women in some (for recent literature reviews, see Anzia and Berry, 2011; Casas-Arce and Saiz, 2012; Pino, 2012). When it comes to leaders, voters are more likely to favor men as a part of a general group stereotype what associates male gender with leadership activities (Akerlof and Kranton, 2000; Eagly and Karau, 2002). Recent work has shown that exposure to female leaders can improve negative stereotypes, in particular among male voters where they are usually stronger (Beaman, 2009). Nevertheless, stereotypes in the eyes of voters, and in parties' perceptions of voter preferences, likely work against women's promotion chances.

**Swedish Municipalities and Political Parties**

We study political promotions made by 3,000 local political parties in 290 municipal elections in Sweden. Each municipality has an elected municipal council with between 31 and 101 members. Municipalities are the lowest level of government but has substantial political power, both via direct taxation and control over public spending. Taken together, municipalities control spending that totals more than one fourth of the Swedish GDP, and employment that exceeds one fourth of the labor force. They are also guaranteed a right of local self-government by the Swedish Instrument of Government, which stipulates that local authorities themselves determine their own affairs. Under the 1991 Local Government Act 2.1, furthermore, the local authorities are themselves responsible for matters of public interests relating to the municipal council and its inhabitants which are not the exclusive responsibility of the state or some other body.

The local government has a directly elected council and an indirectly elected executive branch known as the council board. Executive functions are also carried out in committees that are responsible for areas such as education, financial issues, and building and infrastructure. Members and chairs of these committees and of the council board are not elected by the voters but instead nominated by the political parties after the general election has been held. The majority party (or coalition) appoints all chairs, and the largest party in the majority appoints the chair of the council board. The political opposition appoints the vice chairs, and the largest party in the opposition appoints the vice chair of the council board.
Being a municipal politician is a part time positions for all but a few. The chair of the council board is almost always a full-time appointment. It is also common that the vice-chair of the board has is a full-time position, and in large municipalities there are usually several more full-time positions awarded to the top representatives from both the majority and the opposition.

The Swedish party system is very stable, and municipalities are very similar in terms of which parties compete for power. These are most often the same parties that have representation in the parliament and one or a couple of local parties of smaller size. The nomination procedures in the local branches of the national parties are highly decentralized. The local clubs or internal primaries within the parties of each municipality do the nominating work and voting that leads up to the composition of the party list. Common to all parties is also that these nomination procedures are heavily dominated and coordinated by party elites and fractions (Freidenvall, 2006; Soininen and Ezler, 2006). These elites usually dominate the committee that organizes the nomination process or the internal primary and which also re-arranges the names on the ballot to fit party rules and policies such as gender quotas (Johansson, 1990).

Sweden introduced flexible lists in 1998 and thereby gave each voter the option of circling one politician on the party ballot to express a preference for that candidate (so called preference voting). Politicians that push above 5% of the party's total votes in such preferential votes are given preference to the party's seats in the municipal council. Because 90% of these votes go to "safe" candidates far up on the ballots, the system has so far had a weak impact on the composition of the party group as a whole.

If we compare the average number of preferential votes received by men and women we can see that men receive substantially more preferential votes. However, this should not be interpreted as a strong voter bias against women since the men's advantage stems mainly from the fact that men are more likely to populate the top parts of the party ballots. Voters have a very strong tendency to vote for candidates on the top of the list, which means that list placement is by far the strongest predictor of the amount of preferential votes that a candidate will receive. Figure 1 below shows the average share of preferential votes for men and women with the same list ranks. We see that when we compare men and women with the same list rank, men's advantage is small.
Figure 1. Shares of political parties' total preferential votes by list placement and gender, data for list placements 1 to 10 and for pooled data for the 1998-2010 elections.

Data and Empirical Methodology

Our dataset consists of panel data for every politician who has been listed on an electoral ballot in the seven waves of municipal elections between 1988 and today. For every politician we have yearly panel data for the full 20 year period with regard to socioeconomic characteristics. We also know the politician's rank within each party, captured by his or her list rank on the electoral ballot in every election. For the two most recent elections, 2006 and 2010, we also have information on the appointments of each politician, including all chairs of committees, the municipal council and the municipal council board. We also know whether each politician was hired full-time on his or her political job or not.

Dependent Variables

We construct four indicator variables for top positions:

1. the top slot on the ballot
2. the position as the chair for the municipal council board,
3. any chair position of the council board, the council, or a committee, or
4. a political position with a full-time wage.

The first variable measure the top position within each political party. This top-ranked candidate is almost always the political leader of the party's work, has the role of the party's spokesperson on political issues and chairs the internal party meetings. He or she is usually awarded the top appointment in the municipal political hierarchy that is available to the party. Using our 2006 and
2010 data on appointments we can see that in nine cases out of ten, the chairperson of the municipal council board is the top-ranked person in the largest political party of the governing majority. In eight cases out of ten, the vice chairperson is the top-ranked person from another party, usually the largest opposition party. In seven cases out of ten, when a smaller party has a seat on the municipal council board, this is occupied by their top-ranked politician.

The next three measures capture the top positions within the political hierarchy of the municipality, the chairs of the board, council, and committees. All these positions are appointed by the political parties after the election. The majority party (or coalition)appoints all chairs, and the largest party in the majority appoints the chair of the council board. The political opposition appoints the vice chairs, and the largest party in the opposition appoints the vice chair of the council board. Formally, the municipal council is the most powerful political entity in the municipality, but in reality this body has weak power relative to the committees, and in particular relative to the board (Montin, 2007). In a 2010 survey, municipal council members were asked to rank the different positions with regard to political influence. The highest rank was given to the chair of the board, followed by the chair of the council, and then by the committee chairs. Below the chairs came the vice chairs or each of these entities (Gilljam et al. 2010).

Our three indicators are partly overlapping and capture slightly different degrees and types of influence. The most influential position - chair of the municipal council board - is included separately. There are only 290 positions of this kind available, one in each municipality, and they can only be appointed by the largest party of the governing majority, which limits the sample size. The second indicator covers all types of chairs, the board chair, the council chair and the committee chairs, a total of roughly ten positions by municipality. These chairs together capture all top executive positions, and are appointed by the majority party or coalition. The third indicator, for being a full-time politician, instead captures the top nominations of both the majority and the opposition. The chair of the council board is almost always a full-time appointment. It is also common that the vice-chair of the board has is a full-time position, and in large municipalities there are several more full-time positions to the top two or three persons from both the majority and the opposition. The full-time positions will cover all politicians with a political position that entitles them to full time pay.

*Independent Variables*

We relate each of our measures of top positions to our key independent variable: experience. This is measured as the number of periods that a politician has served as an elected representative during the five previous electoral periods. For those elected in 2006 we thus extend the sample back to 1988, while we go back to 1991 for those elected in 2010. We include all periods, irrespective if they are consecutive or not. This variable captures the main dimension of political seniority by quantifying the number of terms that he or she has been a part of the elected party group. Simple descriptive statistics show that it is beyond question that this type of experience matters for being appointed to the top positions that we consider. Among politicians who have served 5 terms we are about 15
times more likely to find a politician that serves as the council board chairs than we are amongst the freshmen.\textsuperscript{7}

We also use two sets of additional independent variables, one that captures family responsibilities and one that captures qualifications. To measure qualifications we follow the previous literature as closely as our data allows us to. Our first measure is level of education, which has been extensively used in studies of political selection to capture enhanced practical skills, signaling ability, and civic engagement (De Paola and Scoppa, 2011; Besley and Reynal-Querol, 2011; Galasso and Nannicini, 2011; Ferraz and Finan, 2011, Schwindt-Bayer, 2011; Franceschet & Piscopo, 2012, Baltruite et al. 2012). We divide politicians into six categories of educational attainment, ranging from having 9 years of education to having a doctorate degree.

Our second measure of qualifications is age, which is also measured by categorical dummy variables for five age intervals, 18-29, 30-49, 50-60, 61-64, and 65 or above. Including a separate indicator for the 61-64 age span is motivated by the fact that these individuals reach the retirement age during the election period.

The final measure that we use is an indicator variable for whether the individual is a previous parliamentarian. This can matter in two ways. It can serve as an important qualification, but it can also indicate that the politician has devoted his or her efforts to a national rather than local political career.

A commonly used measure of qualifications which our data does not allow us to use is occupation prior to entering politics. The reason for this is that we only have detailed information on occupation starting in 2000. Using this measure would thus eliminate all politicians that had begun to work full time as politicians by that time.

Finally, our data include information on the family situation for each of the politicians during each of the election periods. To the extent that family responsibilities hinder politicians from exerting effort while in office, we can this control for this. Intuitively, family responsibilities should take their largest toll when a politician is responsible for rearing very small children. Based on this we define our control variable as the number of periods that a politician has at least one child that is three years or younger in the household.

\textit{Empirical Methodology}

We are interested in whether men and women are differently rewarded for their experience in elected office. To examine this we divide our sample of politicians elected in 2006 or 2010 into subsamples based on their length of political tenure. Thanks to our large data set we are able to define a subsample for each specific level of political experience, which gives us five different subsamples in

\textsuperscript{7} Since our data ranges from 1988-2010, seven elections, our measure of experience is truncated to five periods. It is also truncated in the sense that we only measure periods when the person is elected, and not his or her previous experience before becoming elected. Politicians often start their associations with their parties before they start.
which everybody has the exact same level of experience: freshmen, 1 term, 2 terms, 3 terms, or 4 terms. We include all politicians with 5 terms or more in office in an additional top category where the comparability across genders is clearly lower since the men in this subsample are likely to have longer average tenures than the women. Within each of these sub-samples we regress each of the four indicators for holding top positions on a dummy variable for being a woman.

A couple of sample restrictions are necessary. We drop local parties to focus on the seven main national parties with presence in the parliament for most of our sample period. When we use the top position on the ballot as the outcome we further restrict the sample to party groups with at least three representatives to make the measure a meaningful indicator of a top position. For the three outcomes that measure top positions in the municipal political hierarchy, we only keep the party groups that have the political mandate to make the specific type of appointment.

To control for politicians' qualifications or family responsibilities we simply include the relevant control variables in the regression for each subsample. By comparing the estimate on women's relative probability of having a top position in these expanded specifications to the baseline specification we can gauge the relative importance of these potential explanatory factors.

Using separate specification for each subsample accounts for the fact that the independent variables can have differential impacts depending on the level of political experience. For family responsibilities in particular, we expect that having had - for example - small children during one previous period should be of more important for those that have served only one previous period in comparison to those that have served five. Also, formal qualifications such as education can be more important for inexperienced politicians than for those with longer experience in office and whom the parties have more first-hand knowledge about. Finally, as argued by (Schwindt-Bayer 2011), different types of women might have entered politics at different points in time due to changes in the social and cultural norms regarding women in politics. This could make the women with fewer periods in office very different from those with decades of experience, which we are able to effectively take into account in our empirical strategy.

**Results: Women's and men's rewards to seniority**

We start by providing a graphical illustration of our main results. Figure 2 shows the share of men and women who have been selected to each of our four top positions and for each level of political experience.
Figure 2. Share of elected politicians that hold top positions, pooled 2006 and 2010 data divided by gender and by the number of periods in elected office.

The graphical results clearly show that experience is an important pre-condition for climbing the political career ladder. For politicians who stay in office for another period there is a clear increase in the proportion of those politicians that hold each one of the top positions.

The higher red bars than black bars show that men are more likely to hold top positions for every level of experience and for each of the four positions that we examine. The gender difference also appears to be the wider in the two graphs on the left hand side, namely the positions where the party can only appoint one person, the top slot on the ballot and the municipal council board chair. In contrast, the gender difference looks somewhat narrower in the cases where the party can make several appointments, when we include all chair positions and all full-time appointments.

To get more precise estimates of the gender difference and to compare the difference in the heights of the bars across experience levels and positions, we quantify the results from Figure 2 using bivariate OLS regressions. For each of the four positions we regress a binary indicator of holding the appointment on a binary indicator for being a woman, and in each sub-sample of experience. The share of men that hold an appointment is captured by the constant, while the estimate for the indicator for being a woman captures the difference in the shares of women and men that hold the position. To calculate the probability that a woman with a given level experience holds a top
appointment we need to take the sum of the constant and the indicator for being a woman. The presentation of the results is organized by columns containing the estimates for each sub-samples based on the length of experience, starting with the freshmen in the leftmost column and gradually increasing the level of experience as we move to the right in the table. The four outcomes are presented in separate horizontal panes.

Table 1. Probabilities of being appointed to top positions by gender and experience.

<table>
<thead>
<tr>
<th>Length of experience in elected office (periods)</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A: Top Ranked on Ballot</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>-1.60***</td>
<td>-3.52***</td>
<td>-4.58***</td>
<td>-4.42***</td>
<td>-8.85***</td>
<td>-7.29***</td>
</tr>
<tr>
<td>Constant</td>
<td>4.22***</td>
<td>12.05***</td>
<td>18.00***</td>
<td>19.84***</td>
<td>27.37***</td>
<td>26.42***</td>
</tr>
<tr>
<td>observations</td>
<td>8,219</td>
<td>4,872</td>
<td>3,164</td>
<td>2,053</td>
<td>1,487</td>
<td>2,157</td>
</tr>
<tr>
<td><strong>B: Any Chair Position</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>-5.48***</td>
<td>-8.48***</td>
<td>-6.66***</td>
<td>-10.05***</td>
<td>-9.03***</td>
<td>-10.36***</td>
</tr>
<tr>
<td>Constant</td>
<td>15.36***</td>
<td>28.77***</td>
<td>34.59***</td>
<td>40.88***</td>
<td>42.28***</td>
<td>46.62***</td>
</tr>
<tr>
<td>observations</td>
<td>5,280</td>
<td>3,179</td>
<td>2,043</td>
<td>1,377</td>
<td>1,017</td>
<td>1,424</td>
</tr>
<tr>
<td><strong>C: Council Board Chair</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>-0.91***</td>
<td>-3.67***</td>
<td>-2.92*</td>
<td>-4.80***</td>
<td>-6.81**</td>
<td>-9.73***</td>
</tr>
<tr>
<td>Constant</td>
<td>1.48***</td>
<td>6.44***</td>
<td>10.24***</td>
<td>12.83***</td>
<td>17.03***</td>
<td>19.87***</td>
</tr>
<tr>
<td>observations</td>
<td>3,291</td>
<td>1,910</td>
<td>1,256</td>
<td>838</td>
<td>644</td>
<td>905</td>
</tr>
<tr>
<td><strong>D: Full Time Politician</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>-1.09***</td>
<td>-1.82*</td>
<td>-1.77</td>
<td>-4.94**</td>
<td>-3.45</td>
<td>-6.81***</td>
</tr>
<tr>
<td>Constant</td>
<td>2.29***</td>
<td>7.70***</td>
<td>12.42***</td>
<td>16.22***</td>
<td>20.34***</td>
<td>20.02***</td>
</tr>
<tr>
<td>observations</td>
<td>4,880</td>
<td>2,685</td>
<td>1,720</td>
<td>1,121</td>
<td>851</td>
<td>1,235</td>
</tr>
</tbody>
</table>

Notes: Standard errors are in parenthesis. The sample includes pooled data for the 2006 and 2010 elections.

The regressions show us the precise heights of the bars in Figure 1. The fact that the constant increases as we move to the right across the columns means that the share of men that hold the top positions increases with their level of experience. We also see that the coefficient on the indicator for being a woman is negative and statistically significant at the ten percent level for nearly all of the
experience levels and all of the positions. Thus, the share of the women who hold the top positions is lower than the share of men who do so for each level of experience.

We can now compare the size of women's disadvantage across periods of experience. For most of our four outcomes, it is apparent that among those who stay in office for another period, the proportion of men who hold the top position grows more than the proportion of women who do so. If we examine the top pane in the Table, being the top ranked individual on the party's ballot, we see that among freshmen, 4.22% of men hold the top slot but only 2.62% of the women do so. After four periods in office, close to 30% of the men hold this position compared to around 20% of the women who have stayed four periods in office. This pattern of a growing gap in the proportion of office holders is visible for the top slot on the ballot, the chair of the municipal council board, and for full-time positions. For the measure of any chair position, it does not appear to be a growing gap.

A second important result can be gauged by assessing women’s relative disadvantage in holding top positions. By relative disadvantage we mean the share of women that hold a top position relative to the share of men. For example, the estimates top left corner in Table 2 shows that 4.22% of the freshmen men and 2.62% of the women are top ranked on their party's ballot, making women’s relative disadvantage (2.62/4.22 = 0.37): women’s probability of holding this position is 40% of the men’s probability to do so. We compute the relative disadvantage for each position and across levels of experience and plot these numbers in Figure 3 below.

![Figure 3](image-url)

**Figure 3.** Women’s relative probability of holding top positions by the number of periods in office.

There are two interesting results in Figure 3. First, we can compare how women's relative probability of holding each top position changes over the periods of experience. We see that each of the lines trend upward over the first two period in office. This means that it is relatively more common for men to immediately be rewarded a top position as they enter the local political arena, but that women catch up (without reaching parity) over the first two periods. After these two periods, all of
the four trend lines turn downward or remain fairly flat over the remaining periods. Among the politicians who remain more than two periods in office, women’s relative probability of holding the top positions either deteriorates or remains at a constant disadvantage. In particular, it is notable that the trend line for the most influential position, the council board chair, trends downward after two periods in office. One explanation for this could be that the women remain in this position for shorter periods of time than men do.

The second comparison that we can make in Figure 3 is to compare women’s relative probability of holding each of our four top positions. This comparison shows that their probability of holding the position as council board chair is substantially lower than the relative probability of holding each of the other three positions. Among men and women who have been in office for five periods or more, women’s probability of being the chair is only 50% of men’s probability. When we include all full time appointments, women’s relative probability of receiving a top position increases to 65%, and when we include any chair position it grows even more, to 80%. What these numbers show is that women have a disadvantage in obtaining all of the top positions, but that their disadvantage increases with the level of influence of the position in question.

Formal Qualifications

Next, we add our control variables for qualifications. Table 2 shows these results, following the same disposition as in Table 1. Due to limited space we do not show the estimates for the control variables, but they can be provided by the authors upon request.

Table 2. Probabilities of being appointed to top positions by gender and experience, including control variables for qualifications.

<table>
<thead>
<tr>
<th>Length of experience in elected office (periods)</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A: Top Ranked on Ballot</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>-1.88***</td>
<td>-4.13***</td>
<td>-5.60***</td>
<td>-5.77***</td>
<td>-10.18***</td>
<td>-6.69***</td>
</tr>
<tr>
<td></td>
<td>(0.40)</td>
<td>(0.86)</td>
<td>(1.29)</td>
<td>(1.70)</td>
<td>(2.20)</td>
<td>(1.98)</td>
</tr>
<tr>
<td>observations</td>
<td>8,216</td>
<td>4,869</td>
<td>3,162</td>
<td>2,052</td>
<td>1,486</td>
<td>2,157</td>
</tr>
<tr>
<td><strong>B: Any Chair Position</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>-5.70***</td>
<td>-8.89***</td>
<td>-7.66***</td>
<td>-11.43***</td>
<td>-10.16***</td>
<td>-10.70***</td>
</tr>
<tr>
<td></td>
<td>(0.92)</td>
<td>(1.49)</td>
<td>(2.07)</td>
<td>(2.53)</td>
<td>(3.23)</td>
<td>(2.81)</td>
</tr>
<tr>
<td>observations</td>
<td>5,280</td>
<td>3,179</td>
<td>2,043</td>
<td>1,377</td>
<td>1,017</td>
<td>1,424</td>
</tr>
<tr>
<td><strong>C: Council Board Chair</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>-0.99***</td>
<td>-3.76***</td>
<td>-3.53***</td>
<td>-5.95***</td>
<td>-8.20***</td>
<td>-9.57***</td>
</tr>
<tr>
<td></td>
<td>(0.35)</td>
<td>(0.93)</td>
<td>(1.59)</td>
<td>(2.08)</td>
<td>(2.73)</td>
<td>(2.45)</td>
</tr>
<tr>
<td>observations</td>
<td>3,291</td>
<td>1,910</td>
<td>1,256</td>
<td>838</td>
<td>644</td>
<td>905</td>
</tr>
</tbody>
</table>
**D: Full Time Politician**

<table>
<thead>
<tr>
<th></th>
<th>Woman</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>-1.25***</td>
<td>-1.96**</td>
<td>-2.94**</td>
<td>-6.58***</td>
<td>-4.80*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.40)</td>
<td>(0.93)</td>
<td>(1.49)</td>
<td>(1.97)</td>
<td>(2.55)</td>
</tr>
<tr>
<td>Observations</td>
<td>4,478</td>
<td>2,684</td>
<td>1,719</td>
<td>1,120</td>
<td>850</td>
<td>1,235</td>
</tr>
</tbody>
</table>

**Notes:**

The estimates in Table 2 show that women’s disadvantage in reaching the top of the political hierarchy cannot be explained by the observable qualifications that we control for. In fact, almost all estimates of women’s disadvantage in the proportion of individuals who hold a top position increase as we include the controls for qualifications. Given that the differences in these estimates are not statistically significant from those in Table 1, we can however not draw the conclusion that women have better qualifications. We can nevertheless forcefully reject the claim that the difference in the probability of holding a top position for a given level of experience is due to women having weaker formal qualification.

**Family responsibilities**

In Table 3 below we replace the control variables for qualifications with our controls for family responsibilities. We control for the number of periods that the politician has had small children (0-3 years old) in the household by interacting this with the binary indicator for being a woman. The interaction term allows us to account for the fact that the impact of children on a politician’s promotions can differ by gender.

Table 3. Probabilities of being appointed to top positions by gender and experience, including controls for the number of periods that a politician has parented small children (0-3 years old).

<table>
<thead>
<tr>
<th>Length of experience in elected office (periods)</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A: Top Ranked on Ballot</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>-1.60***</td>
<td>-3.36***</td>
<td>-4.30***</td>
<td>-4.48**</td>
<td>-6.90***</td>
<td>-7.08***</td>
</tr>
<tr>
<td></td>
<td>(0.40)</td>
<td>(0.88)</td>
<td>(1.38)</td>
<td>(1.76)</td>
<td>(2.31)</td>
<td>(2.08)</td>
</tr>
<tr>
<td>Periods With Small Children</td>
<td>3.15***</td>
<td>2.73***</td>
<td>2.92***</td>
<td>3.54***</td>
<td>1.66***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.20)</td>
<td>(0.96)</td>
<td>(0.88)</td>
<td>(0.77)</td>
<td>(0.52)</td>
<td></td>
</tr>
<tr>
<td>Woman* Periods With Small Children</td>
<td>-0.72</td>
<td>-0.67</td>
<td>0.15</td>
<td>-1.11</td>
<td>1.07</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.68)</td>
<td>(1.37)</td>
<td>(1.28)</td>
<td>(1.23)</td>
<td>(1.12)</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>8,219</td>
<td>4,872</td>
<td>3,164</td>
<td>2,053</td>
<td>1,487</td>
<td>2,157</td>
</tr>
</tbody>
</table>

<p>| <strong>B: Any Chair Position</strong>                     |   |   |   |   |   |   |
| Woman                                         | -5.48*** | -8.40*** | -7.44*** | -11.05*** | -9.16*** | -11.38*** |
|                                              | (0.91)  | (1.59)  | (2.22)  | (2.75)  | (3.53)  | (2.95)  |
| Periods With Small Children                   | 3.56*   | 2.48*   | 1.66    | -0.02   | -0.06   |
|                                              | (1.88)  | (1.30)  | (1.16)  | (0.99)  | (0.73)  |
| Woman* Periods With Small Children            | -0.37    | 1.93    | 1.50    | 0.16    | 1.71    |
|                                              | (2.74)  | (2.07)  | (1.67)  | (1.61)  | (1.54)  |</p>
<table>
<thead>
<tr>
<th>Observations</th>
<th>5,280</th>
<th>3,179</th>
<th>2,043</th>
<th>1,377</th>
<th>1,017</th>
<th>1,424</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C: Council Board Chair</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>-0.91***</td>
<td>-3.24***</td>
<td>-1.87</td>
<td>-4.26*</td>
<td>-6.06**</td>
<td>-10.28***</td>
</tr>
<tr>
<td></td>
<td>(0.35)</td>
<td>(0.93)</td>
<td>(1.67)</td>
<td>(2.18)</td>
<td>(2.88)</td>
<td>(2.54)</td>
</tr>
<tr>
<td>Periods With Small Children</td>
<td>3.52**</td>
<td>3.07**</td>
<td>1.80</td>
<td>1.49</td>
<td>1.21</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.65)</td>
<td>(1.33)</td>
<td>(1.19)</td>
<td>(1.07)</td>
<td>(0.82)</td>
<td></td>
</tr>
<tr>
<td>Woman* Periods With Small Children</td>
<td>-2.05</td>
<td>-2.42</td>
<td>-0.81</td>
<td>-0.53</td>
<td>1.70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.05)</td>
<td>(1.77)</td>
<td>(1.56)</td>
<td>(1.58)</td>
<td>(1.62)</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>3,291</td>
<td>1,910</td>
<td>1,256</td>
<td>838</td>
<td>644</td>
<td>905</td>
</tr>
</tbody>
</table>

| **D: Full Time Politician** |       |       |       |       |       |       |
| Woman        | -1.09*** | -1.10 | -0.95 | -6.13*** | -3.05 | -7.27*** |
|              | (0.39)  | (0.95)  | (1.60) | (2.08)  | (2.72)  | (2.28)  |
| Periods With Small Children | 5.06***  | 3.69***  | 1.85*  | 2.67***  | 1.35*  |
|              | (1.47)  | (1.22)  | (1.11) | (1.02)  | (0.69)  |
| Woman* Periods With Small Children | -3.11  | -1.92  | 1.66  | 0.50  | 1.99  |
|              | (1.98)  | (1.70)  | (1.59) | (1.68)  | (1.45)  |
| Observations | 4,480 | 2,685 | 1,720 | 1,121 | 851 | 1,235 |

**Notes:**

The results presented in Table 3 shows that the presence of small children in the politicians' household have little to do with women's smaller rewards to seniority. It is only for the women with lower levels of experience that the point estimates on the interaction term have a negative sign, which means that the proportion of women who hold top positions falls with the number of periods that the women have had small children in the household. Still, these estimates are not statistically significant, suggesting that the role played by children is minor, even in the earlier stages of the career process. When we interpret these results it is important to recall that we only estimate the gender difference in holding each of our top positions among the politicians who remain in office.

Previous studies have shown that the presence of small children in the household is associated with a greater tendency for women to drop out of their political appointment altogether (Folke and Rickne, 2013). What the estimates in this table shows us is merely that among the politicians who stay in office for another period, women with small children are not significantly less likely than men with small children to hold top positions.

Finally, it is worth noting that the estimates for the periods with children are in many cases positive and significant in Table 3. This suggests that politicians that have had children perform better than those that have not, which is likely to be a product of them being different also in other dimensions, rather than being a direct effect of having children.

*Consequences of women's lower rewards for seniority for the distribution of power*
Having established that women are less likely to hold top appointments for any given level of political experience, we examine how this disadvantage impacts on the overall gender distribution of the top appointments. We perform an exercise in which we ask how the gender distribution for each of the our four types of positions would look if women and men with the same level of experience had the same probability to be selected to a top position. We present the results in Figure 4 where we compare the actual share of each position held by women to the share that would be held by women if men had women were given equal rewards to seniority.

![Womens Share of Top Positions](image)

**Figure 4.** Women’s share of top positions under actual and equal rewards to experience.

Figure 4 clearly shows that the differential awards to seniority can account for a substantial part of women’s under representation on positions of influence. In accordance with the pattern that we saw in the baseline results, women’s disadvantage is more important for the most influential position. Only 28.0% of the council board chairs are women, but if the rewards to seniority were equal women would hold 40.7%. For the other positions the disadvantage is still an important factor, but not as important as for the council board chair. With equal rewards to seniority, the share of women holding the top ballot rank would increase from 34.0% to 41.5%, the share of female full time politicians from 35.7% to 42.7%, and the share of women holding any chair position from 34.8% to 42.0%.

**Conclusions**

"A glass ceiling is a political term used to describe ‘the unseen, yet unbreakable barrier that keeps minorities and women from rising to the upper rungs of the corporate ladder, regardless of their qualifications or achievements.’"
The metaphor of a glass ceiling is highly fitting for the results in this paper. We have departed from a dataset that includes comprehensive individual-level panel data for every local politician on every ballot since 1988. This data gave us a comprehensive list of the candidate pool available for each political party in 2006 and 2010, including the exact number of periods in local and national office of each politician over the previous 22 years. We could then compare the proportion of men and women with the same levels of experience in political office that were holding four different types of top positions in 2006 and 2010.

For the same number of periods in elected office, women were dramatically less likely to have been rewarded with each of our four top positions. We found that among the politicians who stayed for another period in office, the likelihood of holding a top position improved substantially. For all but our widest measurement of top positions, the proportion of men who held the top positions grew more than the proportion of women.

We also examined women's relative probability of being selected for a top position, a comparison that showed a substantially greater disadvantage for women in being promoted to the most influential position compared to the less influential positions. For the council board chair (the equivalent of the Mayor), women with four periods in office were about 50% as likely as the men with the same level of experience to hold this position. For the less prominent position of a full-time political appointment, women were 70% as likely, and for any chair position (including committees) women were 80% as probable to hold those posts. A greater gender gap for more powerful positions is consistent with the interpretation of a glass ceiling. Female politicians' disadvantage in reaching the powerful positions increases with the power of the position.

Our back of the envelope calculations showed that the unequal rewards to experience is key in explaining women's low representation at positions of influence. If the rewards to seniority had been equal the share of female council board chairs would have been 40% rather than the meager 28% that it actually is. This shows that the political glass ceiling that we document is a key factor in accounting for women's underrepresentation at positions of influence.

Our analysis accounted for two explanations of women's failure to reach the top positions at the same rate as their male colleagues with the same level of experience. First, we considered gender differences in qualifications, namely age, number of years of education, or experience in the national parliament. Including these control variables did not impact on our baseline findings, showing that gender differences in these qualifications do not account for our result. The difference in selection is hence not due to women entering politics at a later age and passing the "due date" for top offices before reaching the appropriate level of experience. Nor was it explained by differences in educational attainment or experience as a national-level politician among the men and women in our dataset.

We also found that women's disadvantage in holding top positions for a specific level of experience was explained by a different promotion response for men and women with small children in the
household. We included a continuous control variable for the exact number of previous election periods that the politician had had children between 0-3 years of age in the household and interacted it with the binary indicator for being a woman. This did not change our baseline results. Here, it is notable that previous studies have shown that women who have small children are more likely to drop out of political office in Sweden (Folke and Rickne, 2013). What we capture in this study is instead that among the women and men who stay in office, women’s promotion chances are not further detained by differential responses to the presence of small children in the household.

Our results have several important implications for the discussion vertical gender inequality. It is a common observation in politics, as well as in the corporate world and in academia, that "the higher the office, the fewer the women". It is also a common observation that over time, the proportion of women with sufficient experience for the top positions will increase, and so will equality at the top. Our analysis of the political sector shows that barriers that lie between women and political promotions are more than the need to reach the same level of experience as their male colleagues. Waiting for women to catch up in terms of experience will not solve the problem of vertical inequality as long as men's promotion chances are substantially higher than women's for any given experience level. Our result that this "glass ceiling" is thicker for the most influential of the top positions that we consider adds further concern.

The fact that our results are based on political appointments made in Sweden in the most recent elections underscores the importance of our findings. The term Critical Mass has been used to describe a certain quantity of an entity that is needed to spark an "an irreversible process of change" in attitudes and expectations about women and women's ability to mobilize and organize themselves (Kanter, 1977; Dahlerup, 1988; Davies, 2005). Swedish municipal assemblies have had an average share of women above 40% since 1994, fifteen years before the 2010 election. It is apparent that large inequalities in the promotion process can co-exist with close-parity in numbers.

The fact that our control variables for qualifications and presence of small children in the politicians' household do not capture our estimate effects is also important. Women's disadvantage in promotions clearly goes beyond factors tied to women's own socioeconomic characteristics. This is consistent with the glass ceiling being held in place by actors within the party's selection procedure and in the role of more informal types of qualifications for reaching the top of party organizations. It would be valuable for future research to further explore the selection procedures and qualifications that favor both the greater likelihood of both appointing and reappointing male leaders ahead of female candidates.

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