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## Social Attitudes on Gender Equality and Firms' Discriminatory Pay-Setting

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February 2014

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## **ABSTRACT**

### **Social Attitudes on Gender Equality and Firms' Discriminatory Pay-Setting**

We analyze the relationship between social attitudes on gender equality and firms' pay-setting behavior by combining information about regional votes relative to gender equality laws with a large data set of multi-branch firms and workers. The results show that multi-branch firms pay more discriminatory wages in branches located in regions with a higher social acceptance of gender inequality than in branches located in regions with a lower acceptance. The results are similar for different subsamples of workers, and we cannot find evidence that regional differences in social attitudes influence how firms assign women and men to jobs and occupations. The investigation of a subsample of performance pay workers for whom we are able to observe their time-based and performance pay component separately shows that social attitudes on gender equality only influence the time-based pay component but not the performance pay component of the same workers. Because regional-specific productivity differences should influence the workers' performance pay and time-based pay, unobserved gender-specific productivity differences are not likely to explain the regional variation in within firm gender pay gaps. The results support theories and previous evidence showing that social attitudes influence gender pay gaps in the long run.

JEL Classification: J31, J33, J71, M5

Keywords: gender pay gaps, social attitudes, firms' pay setting

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## Introduction

Although many economic theories emphasize that prejudices can explain why gender and racial pay gaps exist and persist in the long run, only some recent studies show empirically that prejudices indeed account for a substantial part of the regional variation in gender and racial pay gaps. Commonly, these empirical studies combine regional information about individual pay with survey information on social attitudes to measure differences in local prejudices. In this way, Charles and Guryan (2008) show that racist social attitudes account for about one quarter of the regional variation in black and white pay gaps across US states—even after controlling for detailed worker and job characteristics. Charles, Guryan, and Pan (2009) show that sexist attitudes are related to the regional variation of gender pay gaps across US states. Fortin (2005) shows that gender role attitudes relate to the development of gender pay gaps across OECD countries.

However, previous empirical studies analyze the relationship between social attitudes and discriminatory pay gaps solely on the individual level and do not investigate whether and how firms adjust their pay-setting to differences in their local discriminatory environment. To fill this research gap, we investigate gender pay gaps within multi-branch firms that operate in different regions, which are characterized by different levels of social attitudes on gender equality. Becker's (1971) seminal work on taste-based discrimination predicts that prejudicial employers adjust wages of minority workers by exactly the cost of their personal distaste, while non-prejudicial employers gain rents by hiring minority workers at wages above their discriminatory outside options. As a result, firms have no incentives to adjust their pay-setting to their discriminatory environment, and pay gaps will not persist in the long run.

In contrast, more recent theoretical papers argue that it might be optimal for prejudicial, and most importantly, non-prejudicial employers to set discriminatory wages if labor markets are not perfectly competitive. These models implicitly predict that firms have incentives to adjust their pay-setting to their discriminatory environment (e.g. Black 1995; Ros' n 1997; Sasaki 1999; Ros' n 2003). Calibrations show, indeed, that large discriminatory pay gaps are likely to persist in the long run, because all firms have incentives to pay discriminatory wages, even if there are only a few discriminatory firms in the market (Lang and Lehmann, 2012; Lang Manove, and Dickens 2005). Therefore, researchers must understand whether and how social attitudes on gender equality influence firms' discriminatory pay-setting to better understand why discriminatory pay gaps persist in the long run.

Nevertheless, to empirically investigate whether and how social attitudes on gender equality influence firms' discriminatory pay-setting, we have to overcome two major challenges: First, we must find a measure for social attitudes that reflects true preferences of individuals, and is representative for different regions in the labor market. Second, we need information on the pay-setting behavior of firms that operate under the influence of different levels of social attitudes on gender-equality, while other influences such as institutions, technological changes, and economic conditions remain the same. Third, we have to provide convincing evidence that the relationship between social attitudes for gender equality and the pay-setting behavior of firms is not a pure consequence of differences in unobservable gender-specific productivity differences.

We overcome these empirical problems by using information of real votes on two amendments to the Swiss constitution on gender equality laws, and combine this information with a data set on multi-branch firms. First, we follow Lalive and Stutzer (2010) in measuring social attitudes by using information on regional votes on a 1981 amendment to the Swiss constitution on equal rights for women and men. One central part of this referendum states that women and men shall have the same rights and duties in the family and in the labor market. Second, we use information on regional votes on a 2000 amendment to the Swiss constitution stating that women should be fairly represented in federal authorities. Both referenda provide adequate measures of the degree to which voters challenge the traditional role model of women and men in society. Most importantly, voters are likely to reveal their true preferences and prejudices in a secret ballot. In contrast, previous studies mostly rely on survey data and face the problem that respondents report the socially desired outcomes rather than their true preferences.

We combine this data with information on multi-branch firms that operate in different regions of Switzerland. In this way, we are able to observe the pay-setting behavior of firms that are exposed to the same national institutional, regulatory, and technological standards (because they operate in the same country during the same time period) but are exposed to the influence of differing social attitudes and prejudices (because their branches are located in different regions with different social attitudes for gender equality). Therefore, we avoid common problems of some previous studies relying on data from different countries or time periods, which are exposed to strong institutional, educational, and technological differences.

The most challenging difficulty is to provide evidence showing that the relationship between social attitudes on gender equality and firms' pay-setting is not a pure consequence of unobservable gender-specific productivity differences. By definition, social attitudes are

persistent and long lasting and, therefore, not subject to frequent shocks that we might be able to exploit within a quasi-experimental setting. Instead this paper provides another innovative solution to the problem. We are fortunate to observe a subsample of workers on performance pay for which we are able to observe the time-based component and the performance pay component separately for the same worker. As time-based pay is often subject to bargaining between workers and firms, and performance pay is commonly tied more to the workers observed productivity according to specific rules, performance pay is more closely related to workers productivity than time-based pay (e.g., Lazear 2000; Lemieux, Macleod, and Parent 2009). This relationship allows us to apply an empirical proof by contradiction to show that the relationship between social attitudes for gender equality and the discriminatory pay-setting of firms is not driven by a relationship between social attitudes on gender equality and unobserved gender-specific productivity differences. More specifically, under the assumption that the relationship between social attitudes for gender equality and pay is driven by regional gender-specific productivity differences, we have to find an effect of social attitudes on the performance pay component and on the time-based component of the workers pay. In contrast, finding that social attitudes affect only the time-based component but not the performance pay component of the same worker would contradict the assumption that unobserved gender-specific productivity differences are the main cause for our results.

Our results reveal that—within the same firm—gender pay gaps are larger for branches in regions where people are more likely to tolerate gender inequality—i.e. where fewer people approved the equal rights amendment—than in regions where people are less likely to tolerate gender inequality. Indeed, regional differences in voting outcomes explain about 50% of the within-firm variation in gender pay gaps.

The results remain robust and stable when we include detailed worker, occupation and firm characteristics. Although we find that average gender pay gaps are larger for married than for unmarried workers, and larger for long than short tenured workers, the influence of social attitudes on gender pay gaps is relatively similar for all these subsamples. Separate analyses for the time-based and performance pay components on a subsample of workers receiving performance pay show that firms' pay-setting behaviors vary according to regional differences in social attitudes only with regard to their time-based component of pay. If discrimination would be absent, and unobserved gender-specific productivity differences would be the only force driving our results, we should find that social attitudes influence the workers' performance and time-based pay component in a similar way. Therefore, our results do not suggest that only regional specific productivity differences drive our results.

Finally, we cannot find strong evidence that social attitudes on gender equality influence the way firms hire and assign women and men for different jobs and occupations. Although women are on average less likely to hold management positions, have less education, and are more likely to work in lower paying occupations, these gender-specific differences are similar for different branches of the same firms.

Overall, our results indicate that firms adjust their pay setting to their discriminatory environment. Therefore, this study contributes to the discussion of why gender pay gaps persist in the long run even after controlling for a large number of observable productivity-relevant characteristics (e.g., Altonji and Blank 1999; Blau and Kahn 2000; 2006). By showing that firms adjust their pay-setting to their discriminatory environment rather than maintaining similar payment policies across regions, our results shed light on why gender and racial pay gaps persist in the long run. At the same time we support previous empirical studies showing that social attitudes or prejudices explain a substantial part of the variation in discriminatory pay gaps.

The remainder of the paper is organized as follows: Section I describes the theoretical background. Section II presents the empirical model. Section III describes the voting and the firm data. Section IV presents the estimation results. Section V concludes.

## **I. Why should social attitudes influence the pay-setting behavior of firms?**

Becker's seminal work on employers' taste-based discrimination predicts that employers are only willing to hire minority workers (in our case women) at wages low enough to compensate for their personal cost of distaste. Therefore, Becker himself and Arrow (1972) emphasize that employers with weaker prejudicial tastes will gain rents by hiring women. As a result, labor markets will either fully segregate, or all prejudicial employers leave the market.

In such a framework, we would not expect that firms adjust their pay-setting to their discriminatory environment. In the short run, some discriminatory firms might pay women and men differently but these pay differentials equal the employers' personal costs of distaste in every region. In contrast, non-discriminatory firms operating in discriminatory environments have incentives to pay women above their discriminatory market wages and will not adjust their pay-setting behavior in the long run.

Given the difficulty of Becker's framework to explain why gender pay gaps persist in the



long run, several papers extend his work by incorporating market frictions into Becker's model. Black (1995), Rosén (1997), and Rosén (2003), for example, develop equilibrium search models with prejudicial employers or managers. Their idea is that some prejudicial employers or managers in the market reduce outside options for all women by influencing the number or quality of outside offers. As a result gender pay gaps persist in the long run. Lang and Lehmann (2012) and Lang et al. (2005) develop similar wage-posting and wage-bargaining models which predict that discriminatory wage gaps can be large even if there are only a few prejudicial employers on the market. Other studies develop monopsony type models showing that tastes for discrimination, or gender-specific preferences disproportionately increase women's mobility costs or might reduce their possible job choices (Robinson 1969; Boal and Ransom 1997; Bhaskar, Manning, and To 2002; Manning 2008; Hirsch 2009).

All of these models implicitly predict that firms will efficiently adjust their pay-setting behavior to their discriminatory environment. More intuitively, market frictions prevent the full gender segregation of the labor market, and some prejudicial firms employ women for lower wages, and thereby reduce women's outside options. As a consequence non-prejudicial employers can gain rents by paying discriminatory wages. More specifically, non-prejudicial firms may pay less-discriminatory wages than prejudicial firms, but market frictions prevent non-prejudicial firms to pay entirely non-discriminatory wages. However, if not only prejudicial firms but also non-prejudicial firms will pay women lower wages than men, discriminatory gender pay gaps are likely to persist in the long run.

## II. Estimation strategy

The working model of our empirical investigation has the following simple form:

$$\ln w_{i,e(j,r)}^c = \beta_0 + \beta_1 \text{Female}_i + \beta_2 \text{Female}_i \cdot A_r + \bar{\theta}_j + \bar{\eta}_r + \epsilon_{i,e(j,r)} \quad (1)$$

$\ln w_{i,e(j,r)}^c$  is the logarithm of the worker  $i$ 's monthly pay.  $c$  indicates the type of pay, and can be either the total pay (*tot*) or, for the subsample of workers on performance pay, the time-based component (*tb*) or the performance pay component (*pp*).  $e(j, r)$  represents the branch of firm  $j$  in region  $r$ .  $\text{Female}_i$  is a dummy variable that is 1 if the individual is female and 0 otherwise.  $A_r$  is our proxy for prejudicial attitudes towards gender equality measured as the regional fraction of voters that approved the Swiss amendment on gender equality rights.  $\bar{\theta}_j$  is

a firm-specific fixed effect.  $\bar{\eta}_r$  is a canton-specific fixed effects to capture unobserved factors on the cantonal level that are not directly related to the cantonal votes but might influence the pay of workers. Because  $A_r$  varies only on the cantonal level, the incorporation of  $\bar{\eta}_r$  does not allow us to identify the direct effect of the votes  $A_r$  on the worker's pay level.

We analyze firms with branches in different regions. Therefore, our observations are grouped in non-nested clusters of firms and regions. If we would not account for this clustering, we might massively underestimate standard errors, and consequently over-reject standard hypothesis tests, even if would cluster on the regional level. Therefore, we follow Cameron and Miller (2010) and estimate standard errors that account for non-nested clustering on the firm and regional level. To ensure that the covariance matrix has full rank, we partial out the control variables.<sup>1</sup>

We estimate equation (1) for different sub-populations and with different sets of control variables. The coefficient estimate of main interest  $\beta_2$  displays the relationship between the firms' pay-setting behavior and the regional voter approval rate. More precisely, the coefficient estimate indicates by how much the gender pay gap changes between branches (of the same firm) that are located in regions with different social attitudes on gender equality. We can interpret  $\beta_2$  in this way because we incorporate a firm-specific fixed effect to the equation and identify  $\beta_2$  only through the within-firm variance.

### III. Data

This section describes our data sets in detail. Subsection A describes the voting data, and subsection B presents our data on the firms.

#### III.A. The Voting Data

We measure social attitudes on gender equality by voter approval rates across different regions, i.e., cantons, in Switzerland. More specifically, we use information on votes on two amendments of the Swiss constitution with regard to gender equality. First, we follow Lalive and Stutzer (2010) and use voting data on an amendment to the Swiss constitution on equal rights for women and men from 1981. However, this ballot took place more than 10 years

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<sup>1</sup> Another approach to account for the cluster structure on the regional level would be to follow Charles and Guryan (2008) by first estimating gender pay-gaps on the regional level, and then perform a second-stage regression of gender pay gaps on voting outcomes. But this approach would not allow us to estimate the within-firm effect.

before the observation period of our firm data. Although we could expect that social attitudes change slowly over time, we cannot be sure that social attitudes do not change over the course of more than 20 years. Specifically the 1980's have been a period of substantial progress towards more gender equality in the labor market and society in general. Such changes would be problematic for the interpretation of our results if the relative regional structure of social attitudes had changed substantially. For example, regional specific immigration from other countries might alter social attitudes on gender equality for specific regions. Therefore, we alternatively use information on regional votes on the 2000 amendment to the Swiss constitution on a fair representation of women in the federal authorities. In the following, we provide more detailed information on the amendment to the Swiss constitution and present some descriptive statistics for both ballots.

In 1981, Swiss voters had to decide whether to amend the Swiss constitution to reflect not only the equality of human beings in general but the equality of women and men in particular. More specifically, the amendment to the Swiss constitution contains the following expressions:

- “Men and women have equal rights.”
- “Men and women have equal rights and duties in the family.”
- “Men and women are entitled to equal pay for equal work.”
- “Men and women are entitled to equal treatment and equal opportunities in education, schooling and vocational education, in employment and occupation.”

We argue that the regional voter approval rates provide a measure for identifying social attitudes towards gender equality. Although we observe regional variation in social attitudes, the Swiss constitution applies to all regions. In other words, cantons whose voters rejected the amendment nonetheless have the legal obligation to abide by it. Therefore, the amendment has no legal consequences that differ across regions, and, therefore, can be considered as an appropriate measure for social attitudes.

We use data on votes from the Swiss Federal Statistical Office on the equal rights amendment across the 26 Swiss cantons on June 14, 1981.<sup>2</sup> Overall, 60.3% of the voters favored the constitutional amendment, and 39.7% rejected it. Table A.1 provides the voting results separately for each canton.

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<sup>2</sup> The information is available from the Swiss Federal Statistical Office under <http://www.bfs.admin.ch/bfs/portal/de/index/themen/17/03/blank/data/05/01.html>.

—Table A.1 about here—

The variation across cantons is substantial. While in Appenzell Inner Rhoden only about 30% of the voting population approved the amendment on equal rights, in Geneva more than 80% of the voting population approved it. In urban areas such as Zurich, the economic capital of Switzerland, only slightly more than 60% approved the amendment.

As both women and men participated in the voting, the approval rates should represent the opinion of both women and men within each region. Although actual voter approval rates for women and men are not available, given the anonymity of the ballot box, table A.2 shows the results of a post-vote survey on the voting behavior of women and men.<sup>3</sup>

The survey is provided by the Swiss Foundation for Research and Social Sciences and stems from a project called VoxIt, which has conducted post-voting surveys during the two or three weeks following all federal votes since 1977. The project infers information about Swiss voter behavior and political and social affinities. Though even the survey data for the question on gender equality is not representative and is available only for some cantons, the results show a very similar pattern to the actual votes presented in table A.1.

—Table A.2 about here—

For example, in the real vote on the amendment, the cantonal approval rate was highest in Geneva at 85.2% and the result in the VoxIt data also shows Geneva with the highest approval rate, at 88.6%. St. Gallen and Aargau show low approval rates of 46.3% and 52.1%, in the real amendment and relatively low approval rates of 63.4% and 68.4% in the VoxIt survey. As overall approval rates are almost always higher in the post-vote survey than in the real voting outcomes, the data supports that survey data is subject to a desirability bias. Nevertheless, relative outcomes of both data sets are surprisingly similar.

An important outcome of the post-vote survey is that the women's votes quite strongly match men's votes. Women have the lowest approval rates in St. Gallen and Aargau, whereas they have the highest approval rates in Geneva and Zurich. Therefore, the post-vote survey provides some additional indication that the votes proxy social attitudes that manifests in both women's and men's preferences in a particular region.

For our second measure for social attitudes, we use information on regional votes on the

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<sup>3</sup> For more information on the post-vote survey see [http://forsdata.unil.ch/projects/Voxit/docu\\_xl\\_htmlD/ListeVoxDispoD.htm?lang=e&menu=4](http://forsdata.unil.ch/projects/Voxit/docu_xl_htmlD/ListeVoxDispoD.htm?lang=e&menu=4).

2000 amendment to the Swiss constitution on a fair representation of women in federal authorities. The main request of the amendment was that women should be fairly represented in all federal authorities (i.e., in the parliament, the federal council and the federal court) and in the administration (in particular in the federal administration, in state-owned and operated enterprises and in universities). Like the information for the ballot on gender equality in the labor market, the data on the votes about the fair representation amendment comes from the Swiss Federal Statistical Office.<sup>4</sup> Although the two amendments differ in their content, both amendments cover an issue related to social attitudes on gender equality. Specifically, we plausibly assume that the population's general feeling about gender equality affects both amendments in similar ways. Even if the absolute voting outcomes might not be comparable across the two amendments, the information nevertheless helps to clearly identify whether relative differences in social attitudes on gender equality determine differences in the gender pay gap across regions.

Table A.3 presents descriptive statistics on the voting outcome. In contrast to the amendment on gender equality, Swiss voters rejected the amendment on a fair representation of women in federal authorities. Overall, 82.0% of Swiss voters rejected the amendment. Nevertheless, the patterns across regions are very similar to the patterns for the 1981 amendment. Therefore, the results indicate that the relative structure of social attitudes has not changed across cantons over time.

—Table A.3 about here—

Table A.3 uncovers that the relative pattern for the 2000 amendment is astonishingly similar to the pattern of the 1981 amendment in table A.1. For example, Geneva has the highest approval rate for both amendments whereas Appenzell Innerrhoden has the lowest approval rates for both amendments. To clarify this relationship figure A.1 plots the voting results for both amendments against each other. The graph shows a strong positive relationship between both amendments. Moreover, the correlation between both variables amounts to 87.11%. Thus the results strongly suggest that the relative structure of social attitudes did not change substantially over the course of more than 20 years.

### **III.B. The Firm Data**

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<sup>4</sup> The information is available from the Swiss Federal Statistical Office under <http://www.bfs.admin.ch/bfs/portal/de/index/themen/17/03/blank/data/07/01.html>.

Our firm data stems from the Swiss Earnings Structure Survey (ESS), a survey covering a large number of firms. The ESS is based on two-level sampling (i.e., both firms and workers) and selects the firms from the Swiss business and enterprise register. The data is representative of all economic sectors except agriculture. The survey does not cover firms with fewer than 3 employees and provides no information on trainees, apprentices or workers who are only paid on commissions. Firms with less than 20 employees are required to report all employees. Firms with 20 and 50 employees are allowed to report only every second employee, and firms with more than 50 employees are allowed to report every third employee. However, the firms are required to select their reported workers randomly. The ESS, which is based on two-level sampling (i.e., both firms and workers) procedure, selects the firms from the Swiss business and enterprise register. The ESS was conducted in biennially repeated cross-sections since 1994, and participation for firms is compulsory.

To identify multiple branches of firms across cantons, we need information on workers' administrative cantonal districts. As the EES provides such information only for 1994 through 1998, we restrict our sample to that period. Unfortunately, the data only allows identifying different branches if they are located in different cantonal regions. Multiple branches that are located in the same region appear in the data source as a single branch. This restriction, however, is not decisive for the main focus of our analysis, i.e., to analyze the relationship between social attitudes on gender equality and firms' pay-setting behavior.

At the firm level, we restrict our sample to companies in the private sector with branches in more than one canton. To ensure that we can measure a gender pay gap within each branch, we require that every branch in our sample contains information about at least two employees and at least one woman and one man. Additionally, we exclude all agricultural firms because the observations in our data are not representative for this sector. Moreover, some firms report different industry categorizations for branches in different regions. We drop those firms from the sample. Given these restrictions, we have to drop the small canton Appenzell Inner Rhoden from our sample, as none of the branches there matches our restrictions.

At the employee level, we restrict the sample to full-time workers (i.e., workers with more than 30 working hours per week) that were older than 16 when they entered the firm and younger than 65 at the time of the survey. We only incorporate full-time workers in our analysis because part-time workers are likely to differ from full-time workers in terms of their unobserved productivity. In particular, part-time working women are likely to follow a very different career path than full-time working men. We are aware that this restriction is

somewhat strong and excludes more women from our sample than men. However, our results do not change if we use the entire sample of workers. In fact the magnitude of the coefficient estimates becomes even bigger. Nevertheless, as we do not want to capture a part-time effect in our results, we present only the results for the restricted sample of full-time workers in this paper. The remaining results are available upon request.

Table A.4 shows an overview of the observations of the restricted sample.

—Table A.4 about here—

The restriction to employees without missing information for the included variables leaves us with 332,087 employees, of whom 109,058 are women and 223,029 are men. In total, we observe 1277 firms with 4457 branches. Most firms in our sample have about four branches in different cantons whereby the maximum is 25—i.e., some firms have branches in every canton that we include into our sample.

We use the following variables in our investigation: Workers' pay is measured as standardized sum of gross monthly wages. This pay measure includes an employee's contribution to social insurance, payment in kind, regularly paid-out participation in sales and bonuses, and compensation for shift- and night-work. In addition, thirteen months of payments or yearly special payments are included pro rata. Although inflation in Switzerland is not high, we adjust wages according to the National Consumer Price Index. We obtain the workers' education in categories and convert them in years of education according to Wirz (2008). We have a measure for workers' years of tenure and weekly working hours. We know whether workers are covered by a union contract and whether workers are married. We can observe the workers' occupation in twenty-four categories and create five dummies for the workers' job position ranging from no-management position to upper management position.

Descriptive statistics appear in table A.5 for all workers and for women and men separately. About 30% of our sample is female. Average weekly working hours are around 40. Men earn about 0.30 log points more than females. Men have also slightly more education and their average tenure is about 3 years higher than that of women. While we find no big difference in the weekly working hours of men and women, men are substantially more often married and are more likely to hold a management position. This difference is most striking in top and upper management.

—Table A.5 about here—

## IV. Results

This section presents our results in detail. We begin by presenting our main results. In a second step, we present a variety of specification to investigate whether regional gender-specific productivity differences or discriminatory pay setting is more likely to explain the relationship between social attitudes on gender equality and the firms' pay setting. Finally, we investigate whether social attitudes on gender equality influence how firms assign workers to different jobs and occupations.

### *The effect of social attitudes on gender pay gaps:*

Figure 1 graphically shows a regression of regional firm-internal gender pay gaps and the average regional approval rates in Switzerland. Specifically, the results in the figure stem from the following two-step procedure: First, we predict gender pay-gaps for each canton using all observations. As our interest lies in investigating the differences in gender pay gaps within firms, we account for firm fixed effects in the first stage. Second, we regress these predicted pay-gaps on the regional shares of voter approval rates by collapsing the data to the 25 observations on the cantonal level. To take into account that the gender pay gaps are estimated with varying precision, we weight each of the 25 observations by the inverse of the coefficient variance of the first-stage regression.

— Figure 1 about here —

The figure is suggestive for a tendency that the average gender pay gap is smaller in branches located in regions where more voters approved the equality rights amendment than in regions where fewer voters approved the equality rights amendment. More specifically, the gender pay gap is on average about 0.10 log points smaller in branches located in regions where about 80% approved the equal rights amendment than in branches located in regions where only about 40% approved the equal rights amendment. The R-squared of this regression amounts to 0.449 indicating that more than half of the variation in within-firm gender pay gaps can be attributed to changes in voter approval rates.

However, the previous procedure does not display the within-firm effect of voter approval rates on gender pay gaps. Therefore, in the following, we show the results of various



specifications of equation (1) for the entire sample of observed workers. Table I presents the estimation results. The table shows six different specifications including different sets of control variables.

— Table I about here —

The first column of Table I shows the results of specification I, which does not include any control variables. The first row of column I shows a within-firm gender pay gap that amounts to about 44 percentage points for a branch located in a hypothetical region where nobody approved the equality rights amendment. The second row displays the effect of main interest. The point estimate of the interaction term between voter approval rates and the indicator for females is 0.223. This value indicates that every 10 percentage point difference in voter approval rate is associated with a 2.2 percentage points decrease in the within-firm gender pay gap. For example, the two cities of Lucerne and Basel-Stadt are of similar size and have a similar urban structure. The within-firm average gender pay gap is about 32 percentage points in a branch in Lucerne where about 50% approved the amendment. Yet the pay gap is only 28 percentage points in Basel-Stadt where about 72% approved the amendment. Thus in our example the gender pay gap decreases by 4.8 percentage points and is therefore about 12% smaller in Basel-Stadt than in Lucerne.

Becker's model implicates that minority workers sort away from discriminatory employers to non- or less-discriminatory employers. Therefore, the marginal rather than the average employer's prejudice should determine discriminatory pay gaps in equilibrium. However, because women usually account for larger shares of the workforce than racial minorities, women are more likely to work for employers with average discriminatory prejudices. Thus in contrast to racial pay gaps, our results are in line with Charles et al. (2009), who also find that gender pay gaps are determined by average prejudices. Unfortunately, percentiles of our voting distributions collapse to 1's and 0's. As a consequence, we cannot follow Charles et al. (2009), and investigate the relationship between gender pay gaps and other parts of the prejudice distribution.

As mentioned in the data section, the amendment for gender-specific equality rights took place in 1981—more than 10 years before our observation period. Therefore, in the second specification we replace the voting data on the 1981 amendment with voting data of the 2000 amendment for a fair representation of women in federal authorities. The second column of table I shows the results. The coefficient estimate of the interaction term between the approval

rates of the 2000 amendment and the gender dummy is positive and highly significant. Specifically, a 10 percentage point increase in voter approval rates is associated with a 3.8 percentage point decrease in the firm internal gender pay gap. Conclusively, the results of the 2000 amendment confirm our results of the 1981 amendment. In the remaining three specifications, we successively add further control variables to the regression. Specification III of table I shows that the inclusion of occupational dummies only modestly reduces the coefficient estimates of both variables. Therefore, occupational segregation appears not to be the major mechanism by which social norms influence the pay-setting behavior of firms. In specification IV of table I we examine how the inclusion of the worker's job position mitigates the relationship between voter approval rates and gender pay differentials. The job position is measured in five categories ranging from no management position to high and upper management position. After the inclusion of the dummies for the worker's job position the magnitude of the average isolated gender pay gap decreases to about 36%. In contrast, the coefficient estimate of the interaction term between approval rates and the gender dummy increases slightly and now amounts to 0.257.

In specification V, we investigate to what extent observable individual worker characteristics mitigate the relationship between regional approval rates and firm internal pay gaps. Specifically, we add variables for tenure and a squared term for tenure, entry-age and a squared term for entry age, union and marital status, and years of education to specification V. Moreover, in order to account for the gender specific effects of the workers' entry age on wages we interact the entry-age variable with the gender dummy.

In the first row of column V, we find substantial effects of observable worker characteristics on the isolated gender pay gap. Specifically, the gap drops by about 0.12 log points from 0.360 log points to about 0.235 log points. This result indicates that observable worker characteristics mediate a substantial amount of the average gender pay gap. In comparison to these effects, the decrease in the coefficient estimate of the interaction term between voter approval rates and the female dummy is a little more modest. The coefficient estimate drops from about 0.257 log points to about 0.181 log points. Referring to our previous example, the conditional gender pay gap under this specification is about 15% in Lucerne and about 11% in Basel-Stadt. In other words, the conditional gender pay gap is about 33% higher in Lucerne than in Basel-Stadt.

Even if the inclusion of worker and firm characteristics does not explain the relationship between voter approval rates and the pay setting behavior of firms, our results might be related to unobserved regional gender-specific productivity differences. Such productivity

differences might persist even for women and men who work in the same jobs and firms. Ideally, we would exploit an exogenous shock to social attitudes to estimate the causal effect of social attitudes on the firm's pay setting behavior. But social norms and attitudes are persistent in the long run, and external influences tend to change social norms only over longer time periods. Therefore, we deal with this problematic by providing suggestive evidence to investigate whether specific sources of gender-specific productivity differences mediate our results substantially in the following.

*Married and unmarried workers:*

Women in socially more conservative regions may undertake a larger share of the house work than women in socially less conservative regions. The increased workload may detain women from participating in further work place training and promotions, or simply reduce women's resources to engage in productive work. In a similar way, men in socially more conservative regions may focus relatively less on household work. In particular, married workers are more likely to have family responsibilities than unmarried workers. If social attitudes are related to this type of regional productivity differences, social attitudes on gender equality should be more likely to affect gender gaps of married workers. Therefore, table II shows estimation results for married and unmarried workers separately.

— Table II about here —

The first row shows that the raw gender pay gap for married workers is three times as large as the gender pay gap for unmarried workers. Thus married women may be on average more focused on household work than unmarried women. However, the second row shows that the gender penalty of working in regions where more people oppose female rights is relatively similar for married and unmarried workers. Conclusively, gender specific productivity differences that arise because married women in socially more conservative regions undertake more household work are unlikely to explain the previous results.

*Long vs. short tenured workers:*

Unobserved productivity differences are likely to increase with tenure. Women in more conservative regions may invest less in on the job training, or employers need time to learn

about the workers productivity differences. Moreover, women might hit a glass ceiling at later stages of their careers. On one hand discriminatory attitudes may detain women from higher paying jobs at later stages of their careers. On the other hand women may have preferences for less competitive, and maybe lower paying jobs. Therefore, table III shows results for workers in different tenure categories.

— Table III about here —

The results show that average gender pay gaps increase substantially with the workers' tenure. While we do not find a raw gender pay gap for workers with less than two years of tenure, the raw gender pay gap increases to about 20 percentage points for workers with more than 10 years of tenure. In contrast, the gender penalty for working in regions where more people oppose female rights in the labor market only increases slightly from about 15 percentage points to 20 percentage points. Again the results are suggestive that unobserved regional productivity differences are not likely to explain all of our results.

*Time-based vs. performance pay:*

In the following, we analyze a subsample of workers whose pay consists of a performance pay and a time-based pay component. Under the assumption that employers do not discriminate, regional gender-specific productivity differences should influence the workers' time-based and performance pay component in the same way. In other words, we should expect to find a similar coefficient estimate for the interaction term between voter approval rates and the gender dummy in the same workers' time-based and performance pay component.

Because performance pay contracts are commonly designed to provide incentives to exert optimal effort, the performance pay components must be tied to the workers productivity according to specific rules, such that managers are likely to face more difficulties to discriminate under performance pay than under time-based pay. Thus finding an effect of social attitudes on the gender pay gap under the time-based component but not under the performance pay component contradicts the assumption of gender-specific productivity differences. Indeed, several previous empirical studies show that wages of performance pay workers are more closely related to their observed and unobserved productivity than wages of workers under time-based pay (e.g., Lazear 2000; Lemieux et al. 2009).

However, we are aware that some researchers argue that managers may even discriminate more under performance pay than under time based pay if the workers' performance pay is based on the subjective evaluation of managers. But as MacLeod (2003) shows, in contrast to the discrimination in time-based pay, discrimination in performance pay always reduces workers' incentives to exert effort. Specifically, if performance evaluations are based on workers' relative performance, discrimination may not only reduce the incentives for minority but also for majority workers. Therefore, MacLeod (2003) implicates that managers who set discriminatory, and thus inefficient performance pay components, always reduce the firm's potential profitability (even if market friction are present). As a consequence, especially non-prejudicial employers should not engage in discriminatory wage setting under performance pay. Nevertheless, even if managers act against this rationality and discriminate more under performance than under time-based pay, we should expect that social attitudes have a stronger but not a weaker effect on the workers' performance pay component.

We investigate these arguments with a subsample of workers for whom we are able to observe a fixed time-based pay component that is only based on the contractual working hours and a specific performance pay component that includes payment for premiums, bonus payments, gratification and profit sharing. Given that for workers who are regularly paid by commissions and piece rates, we are not able to distinguish the workers' performance pay from the workers' time-based pay, we remove these workers from our sample of performance pay workers. In total, our sample of performance pay workers amounts to 88,742 individual workers.

Descriptive statistics of the subsample appear in table A.6

—Table A.6 about here—

30% of the restricted sample of performance pay workers is female. Thus the distribution of women and men appears similar to that in the entire sample of workers. On average, the time-based component of pay for performance pay workers is about 0.10 log points higher than the gross monthly wage for the entire sample of workers. This result holds for both women and men. The raw gender pay gap is about 0.30 log points for the performance pay and the time-based pay component. Therefore, the gender pay gap of the restricted sample is very similar to the gender pay gap of the entire sample.

Tables IV and V present the results. Table IV shows the results for the time-based component of pay. Table V shows the results for the performance pay component of those

same workers.

— Table IV about here —

— Table V about here —

In specification I of table IV, we show the results without further control variables. The results show an isolated gender pay gap for the time-based component of pay of about 0.394 log points. This value is very similar to the estimates from the entire sample in table I.

The result of main interest—the coefficient estimate of the interaction term between the female dummy and the voter approval rate—shows a positive significant estimate for the time-based pay component. The effect is with 0.174 log points slightly smaller than the effect for the entire sample in table I. One possible explanation is that women working under performance pay are more competitive or more focused on their career, so that the gender pay gap is somewhat smaller for performance pay workers—even in the time-based pay component.

The first specification of table V shows the same results for the performance pay component of those same workers. In contrast to the results for the time-based component, we do not find a significant effect of the interaction term on the performance pay component. Specifically, the effect for the performance pay component is about 0.09 log points smaller than for the time-based pay component, and is accompanied by a huge standard error. Therefore, results contradict the assumption that unobserved productivity differences solely explain the within-firm variation in gender pay gaps. Note that the average gender gap is larger in performance pay than in time-based pay. This results points out that women benefit less from performance pay or sort away from jobs with large amounts of performance compensation. However, this relationship is the same across regions.

In specification II of table IV and V we replace the voting data on the 1981 amendment by the voting data of the 2000 amendment. The results of specification II are qualitatively similar to those in specification I and thus support our argumentation.

Specification III incorporates all controls for observable job and worker characteristics, and show a substantial reduction of the isolated gender pay gap for both the workers' performance pay and the workers' time-based pay component. In contrast, the coefficient estimate of the interaction term between the female dummy and the regional approval rate decreases only slightly for the time-based pay component, whereas the same interaction term

remains insignificant for the performance pay component.

Specification IV of table IV adds the log of the performance pay component to the regression equation for the time-based component. Under the assumptions that productivity differences are not the main explanation for the relationship between voter approval rates and the within-firm gender pay gap and that performance pay is more closely related to the workers' productivity than time-based pay, the incorporation of the performance pay component should not affect the estimate for the interaction term between approval rates and the gender dummy. The results in specification IV show that the incorporation of performance pay reduces the isolated gender pay gap substantially but barely affects the coefficient estimate of the interaction term between voter approval rates and the gender dummy.

Thus far, our results contradict the assumption that regional gender-specific productivity differences constitute the relationship between social attitudes and the variation of within-firm gender pay gaps.

One concern with the results in table IV and V is that measurement error might be bigger for the information about the performance pay component than for the information about the time-based pay component. Although the data for both forms of payment are collected by the same source (the statistical office of Switzerland), the information on the performance pay data might be less adequate than that on the time-based pay data. For example, firms might collect the data on the time-based pay more adequately than for performance pay. Given that a structural relationship between this type of measurement error in the dependent variable and the explanatory variable is not likely, this measurement error does not bias our coefficient estimates. Nevertheless, measurement error in the dependent variable could increase the standard errors of the coefficient estimates even if such a structural relationship does not exist. However, even without the presence of measurement error in the dependent variables we can expect to observe bigger standard errors under performance pay than under time-based pay, as performance pay is more closely related to unobserved productivity differences than time-based pay. Yet, if the results were an artifact stemming from differences in measurement error between the performance pay and time-based pay component, the results would not support our argumentation.

To deal with this concern, we make the following robustness check: We estimate our regressions with homoscedastic error variances. This approach potentially underestimates standard errors if the assumption of homoscedasticity is violated. Nevertheless, given that our argumentation rests upon the insignificance of a coefficient estimate, such an approach is more conservative for our specific objective.

Table VI and VII presents the results of this approach. As the tables show, the homoscedastic standard errors are substantially smaller than the clustered standard errors. In most cases standard errors are reduced by more than a half. Nevertheless, these results are still in line with our argumentation. Specifically, even with these potentially underestimated standard errors, the interaction term between voter approval rates and the female dummy is not significantly different from zero for the regressions on performance pay.

— Table VI about here —

— Table VII about here —

Another potential concern is that performance pay is not at all related to the workers productivity. For example, firms might pay the lions share of bonuses to all workers in each firm and do not pay more productive workers more than less productive workers. As a result, we expect not to find significant correlations between our performance pay measure and other productivity relevant variables. Therefore, we separately estimate the rates of return to tenure and education for the time-based and the performance pay component. The results appear in table VIII. We perform separate regressions for women and men, and the regressions contain all control variables and firm fixed-effects.

— Table VIII about here —

Table VIII shows that all coefficient estimates have the expected signs and are highly significant for the time-based and the performance pay component. The estimated coefficients are even higher for the performance pay component. Moreover, the specifications show very similar rates of return for women and men—both under the time-based and the performance pay component. Consequently, these results support the view that performance pay is related to the workers' productivity.

*The effect of social attitudes on job and firm segregation:*

Social attitudes are likely to influence individual preferences for human capital investments, job choices, and consequently influence how firms hire and assign workers to jobs across different regions (Akerlof and Kranton 2000). For example, if firms operate under socially



conservative norms, fewer women might apply for stereotype male jobs. Moreover, social expectations might detain women from investing in human capital to obtain the relevant skills for high-paying jobs. Finally, discrimination and social preferences might lead women to stay at home. Indeed, a variety of studies support such a relationship by showing that social attitudes on gender equality affect women's labor supply and fertility (Fernandez et al. 2004; Fortin 2005; Charles et al. 2009; Fernandez 2011).

However, it is unclear whether social attitudes influence whether women and men segregate into entirely different companies, or whether social attitudes do also influence the way in which firms hire and assign women to different jobs within the same company. Table IX investigates the relationship between social attitudes on gender-equality and the segregation of individuals between firms. The first specification presents an OLS regression of voter approval rates on the share of women per branch. Because all observations are grouped on the firm and regional level, estimated standard errors account for non-nested clustering.

— Table IX about here —

The first specification of table IX shows a positive significant coefficient estimate indicating that the average share of women per branch increases in voter approval rates. Specifically, a 10 percentage point increase in voter approval rates is associated with a 1.8 percentage point increase in the share of women per branch. This is a quite substantial effect given that the average share of women per branch is about 32 percent. The result is in line with Becker's model and other previous studies, which show that social attitudes influence women's labor force participation.

However, if we account for firm-fixed effects in the second specification, the point estimate decreases substantially and becomes insignificant. Thus the results suggest that regional social attitudes on gender equality influence how women and men sort between but not within firms. In other words, woman and men seem to segregate in different firms but firms do not to employ different shares of women and men in different regions.

The third and fourth column present similar OLS regressions of voter approval rates on the Duncan index on the branch level. The Duncan index is a common measure for occupational segregation, and can be interpreted as the percentage of women who would have to change occupations to achieve an occupational distribution similar to men. On average about 40 percent of women within the average branch had to change occupation to achieve a

distribution similar to men. Column three shows a negative coefficient estimate of voter approval rates indicating that branches are more segregated in socially more conservative regions. Albeit the point estimate is not particularly small, the effect is not significant. If we account for firm fixed-effects the point estimate decreases substantially. In summary, the results suggest that regional social attitudes on gender equality influence how women and men sort between but not within firms.

Table X investigates the relationship between social attitudes on gender-equality and the assignment of women and men to different jobs within firms. The first column presents a linear regression of years of education on an interaction between a female dummy and voter approval rates. The regression contains firm and canton fixed-effects and standard errors account for non-nested clustering. The results show a gender gap in years of schooling of about 1.4 years but we do not find a relationship between voter approval rates and the gap in years of schooling.

The second column presents a linear probability model in which we regress a dummy variable indicating whether an individual holds a management position on the same interaction terms. The estimates show that women are on average about 18 percentage points less likely to hold a management position than men. Again this relationship seems to be the same across branches of the same firm.

In the third column, we replace the dependent variable by a measure for the average log pay within each occupation. This regression allows us to infer whether women and men select into jobs with different pay levels. The table shows that the average pay of women's occupations is about 8 percentage points lower than the average pay of men's occupations. However, we do not find a strong relationship between voter approval rates and gender-specific differences in the average occupational pay within firms.

The fourth column shows the relationship between voter approval rates and the gender-specific probability to receive performance pay. For this specification we do not find any significant outcomes indicating that the probability to receive performance pay does not differ between women and men within firms.

— Table X about here —

In summary, the results are not suggestive for a strong relationship of voter approval rates and the assignment of women and men to different jobs within firms.

## V. Conclusion

We combine information on regional variation in social attitudes on gender equality with a large data set of multi-branch firms and workers to analyze the relationship between social attitudes on gender equality and firms' discriminatory pay-setting behavior. We find that within-firm gender pay gaps are larger in regions where fewer people challenge traditional gender roles. The results remain robust if we account for detailed worker and job characteristics, and we cannot find evidence that social attitudes on gender-equality influence how firms assign women and men to different jobs and occupations across regions.

Moreover, we find that the relationship between social attitudes on gender equality and gender pay gaps manifests only in the time-based component but not in the performance pay component of the same workers. Because several previous empirical studies argue and show that performance pay is more closely related to workers' productivity than time based pay (e.g., Lazear 2000; Lemieux et al. 2009), we argue that regional productivity differences are not likely to explain the relationship between social attitudes on gender equality and the firms' regional pay-setting behavior.

If prejudicial and non-prejudicial firms adjust their pay-setting to their discriminatory environment, gender pay gaps are likely to be big and persistent in the long run. Conclusively, our results support theoretical and empirical papers explaining discriminatory pay-setting with the existence of social attitudes and prejudices against minority workers, and shed light on why gender pay gaps persist in the long run.

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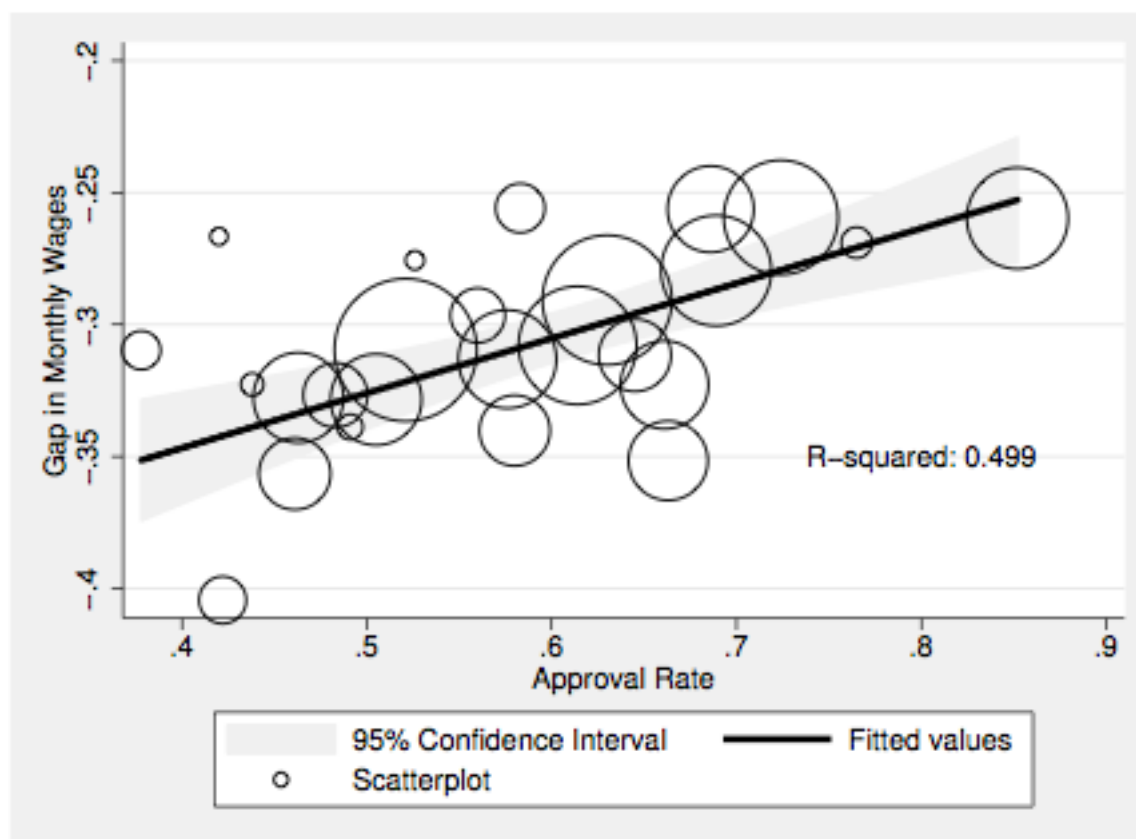
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## VI. Tables and figures in the text



*Figure 1. Monthly Wages and Approval Rates.*

*Notes:* The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. The voting data stem from the Swiss Federal Statistical Office.

*Table 1. Wage Regression 1 (Monthly Wages of the Entire Sample).*

Dependent variable:	log(monthly income)				
Specifications:	I	II	III	IV	V
Female	-0.437*** (0.020)	-0.372*** (0.011)	-0.418*** (0.013)	-0.359*** (0.024)	-0.235*** (0.032)
Female* Approval Rate: Equal Rights (1981)	0.223*** (0.033)	-	0.208*** (0.017)	0.257*** (0.028)	0.181*** (0.031)
Female* Approval Rate: Representation (2000)	-	0.379*** (0.053)	-	-	-
Firm fixed effects	Yes	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes	Yes
Occupation	No	No	Yes	Yes	Yes
Job position	No	No	No	Yes	Yes
Prod. relevant characteristics	No	No	No	No	Yes
Observations:	332087	332087	332087	332087	332087

*Notes:* The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. The voting data stem from the Swiss Federal Statistical Office. The dependent variable is monthly time- based wage for all workers. The control variables include: tenure, tenure squared, firm entry age, entry age squared, education union status, marital status, job position and occupation. Non-nested standard errors are calculated at the region and firm level. \* Significant at 10 % level; \*\* Significant at 5 % level; \*\*\* Significant at 1 % level.

Table 2. Married vs Unmarried Workers.

Dependent variable:	log(monthly income)	
Specifications:	Married	Unmarried
Female	-0.339*** (0.031)	-0.110*** (0.032)
Female* Approval Rate: Equal Rights (1981)	0.208*** (0.037)	0.187*** (0.033)
Firm fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Occupation	Yes	Yes
Job position	Yes	Yes
Prod. relevant characteristics	Yes	Yes
Observations:	198369	133711

*Notes:* The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. The voting data stem from the Swiss Federal Statistical Office. The dependent variable is monthly time- based wage for all workers. The control variables include: tenure, tenure squared, firm entry age, entry age squared, education union status, marital status, job position and occupation. Non-nested standard errors are calculated at the region and firm level. \* Significant at 10 % level; \*\* Significant at 5 % level; \*\*\* Significant at 1 % level.



Table 3. Short vs Long-Tenured Workers.

Dependent variable:	log(monthly income)			
Specifications:	tenure $\leq 2$	$2 \leq$ tenure $\leq 5$	$2 \leq$ tenure $\leq 5$	$10 \leq$ tenure
Female	-0.003 (0.049)	-0.021 (0.037)	-0.129** (0.045)	-0.282*** (0.033)
Female* Approval Rate: Equal Rights (1981)	1.157*** (0.034)	0.194*** (0.046)	0.214*** (0.040)	0.212*** (0.047)
Firm fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Occupation	Yes	Yes	Yes	Yes
Job position	Yes	Yes	Yes	Yes
Prod. relevant characteristics	Yes	Yes	Yes	Yes
Observations:	55403	64365	86689	125487

Notes: The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. The voting data stem from the Swiss Federal Statistical Office. The dependent variable is monthly time- based wage for all workers. The control variables include: tenure, tenure squared, firm entry age, entry age squared, education union status, marital status, job position and occupation. Non-nested standard errors are calculated at the region and firm level. \* Significant at 10 % level; \*\* Significant at 5 % level; \*\*\* Significant at 1 % level.

Table 4. Wage Regression III: Time-Based Pay Component.

	I Base	II Representation	III Controls: Labor Market	IV Controls: Performance Pay
Female	-0.394*** (0.029)	-0.342*** (0.021)	-0.223*** (0.042)	-0.178*** (0.049)
Female* Approval Rate: Equal Rights (1981)	0.174*** (0.047)	-	0.127** (0.058)	0.172*** (0.035)
Female* Approval Rate: Representation (2000)	-	0.290*** (0.098)	-	-
Firm fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Occupation	No	No	Yes	Yes
Job position	No	No	Yes	Yes
Prod. relevant characteristics	No	No	Yes	Yes
Observations:	88742	88742	88742	88742

*Notes:* The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. The voting data stem from the Swiss Federal Statistical Office. The dependent variable is monthly time- based wage for all workers. The control variables include: tenure, tenure squared, firm entry age, entry age squared, education union status, marital status, job position and occupation. Non-nested standard errors are calculated at the region and firm level. \* Significant at 10 % level; \*\* Significant at 5 % level; \*\*\* Significant at 1 % level.

Table 5. Wage Regression III: Performance Pay Component.

	I Base	II Representation	III Controls: Labor Market
Female	-0.478*** (0.159)	-0.434*** (0.096)	-0.321* (0.173)
Female* Approval Rate: Equal Rights (1981)	0.088 (0.238)	-	0.127** (0.058)
Female* Approval Rate: Representation (2000)	-	0.061 (0.397)	-
Firm fixed effects	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes
Occupation	No	No	Yes
Job position	No	No	Yes
Prod. relevant characteristics	No	No	Yes
Observations:	88742	88742	88742

*Notes:* The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. The voting data stem from the Swiss Federal Statistical Office. The dependent variable is monthly time- based wage for all workers. The control variables include: tenure, tenure squared, firm entry age, entry age squared, education union status, marital status, job position and occupation. Non-nested standard errors are calculated at the region and firm level. \* Significant at 10 % level; \*\* Significant at 5 % level; \*\*\* Significant at 1 % level.

*Table 6. Wage Regression IV: Time-Based Pay Component  
(Homoscedastic Standard Errors).*

	I Base	II Representation	III Controls: Labor Market	IV Controls: Performance Pay
Female	-0.394*** (0.015)	-0.342*** (0.009)	-0.223*** (0.017)	-0.178*** (0.014)
Female* Approval Rate: Equal Rights (1981)	0.174*** (0.023)	-	0.127** (0.014)	0.172*** (0.018)
Female* Approval Rate: Representation (2000)	-	0.290*** (0.043)	-	-
Firm fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Occupation	No	No	Yes	Yes
Job position	No	No	Yes	Yes
Prod. relevant characteristics	No	No	Yes	Yes
Observations:	88742	88742	88742	88742

*Notes:* The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. The voting data stem from the Swiss Federal Statistical Office. The dependent variable is monthly time- based wage for all workers. The control variables include: tenure, tenure squared, firm entry age, entry age squared, education union status, marital status, job position and occupation. Non-nested standard errors are calculated at the region and firm level. \* Significant at 10 % level; \*\* Significant at 5 % level; \*\*\* Significant at 1 % level.

*Table 7. Wage Regression IV: Performance Pay Component  
(Homoscedastic Standard Errors).*

	I Base	II Representation	III Controls: Labor Market
Female	-0.478*** (0.045)	-0.434*** (0.045)	-0.321*** (0.076)
Female* Approval Rate: Equal Rights (1981)	0.088 (0.071)	-	0.026 (0.060)
Female* Approval Rate: Representation (2000)	-	0.061 (0.134)	-
Firm fixed effects	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes
Occupation	No	No	Yes
Job position	No	No	Yes
Prod. relevant characteristics	No	No	Yes
Observations:	88742	88742	88742

*Notes:* The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. The voting data stem from the Swiss Federal Statistical Office. The dependent variable is monthly time- based wage for all workers. The control variables include: tenure, tenure squared, firm entry age, entry age squared, education union status, marital status, job position and occupation. Non-nested standard errors are calculated at the region and firm level. \* Significant at 10 % level; \*\* Significant at 5 % level; \*\*\* Significant at 1 % level.

Table 8. Tenure and Education.

	Men		Women	
	Performance pay	Time-based pay	Performance pay	Time-based pay
Education	0.040*** (0.009)	0.029*** (0.003)	0.042*** (0.009)	0.028*** (0.003)
Tenure	0.038*** (0.007)	0.013*** (0.001)	0.044*** (0.007)	0.011*** (0.002)
Tenure sq	-0.001*** (0.000)	-0.000*** (0.000)	-0.001*** (0.000)	-0.000** (0.000)
Observations:	62419	62419	26323	26323

*Notes:* The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. The voting data stem from the Swiss Federal Statistical Office. The dependent variable is monthly time- based wage for all workers. The control variables include: tenure, tenure squared, firm entry age, entry age squared, education union status, marital status, job position and occupation. Non-nested standard errors are calculated at the region and firm level. \* Significant at 10 % level; \*\* Significant at 5 % level; \*\*\* Significant at 1 % level.

*Table 9. Social Attitudes and Gender-Specific Firm Segregation.*

	Share Female:		Duncan index:	
	I	II	I	II
Average		0.328 (0.172)		0.422 (0.224)
Approval Rate: Equal Rights (1981)	0.184** (0.077)	-0.018 (0.074)	-0.091 (0.087)	-0.16 (0.050)
Firm fixed effects	No	Yes	No	Yes
Region fixed effects	No	Yes	No	Yes
	332087	332087	332087	332087

*Notes:* The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. The voting data stem from the Swiss Federal Statistical Office. Non-nested standard errors are calculated at the region and firm level. \* Significant at 10 % level; \*\* Significant at 5 % level; \*\*\* Significant at 1 % level.

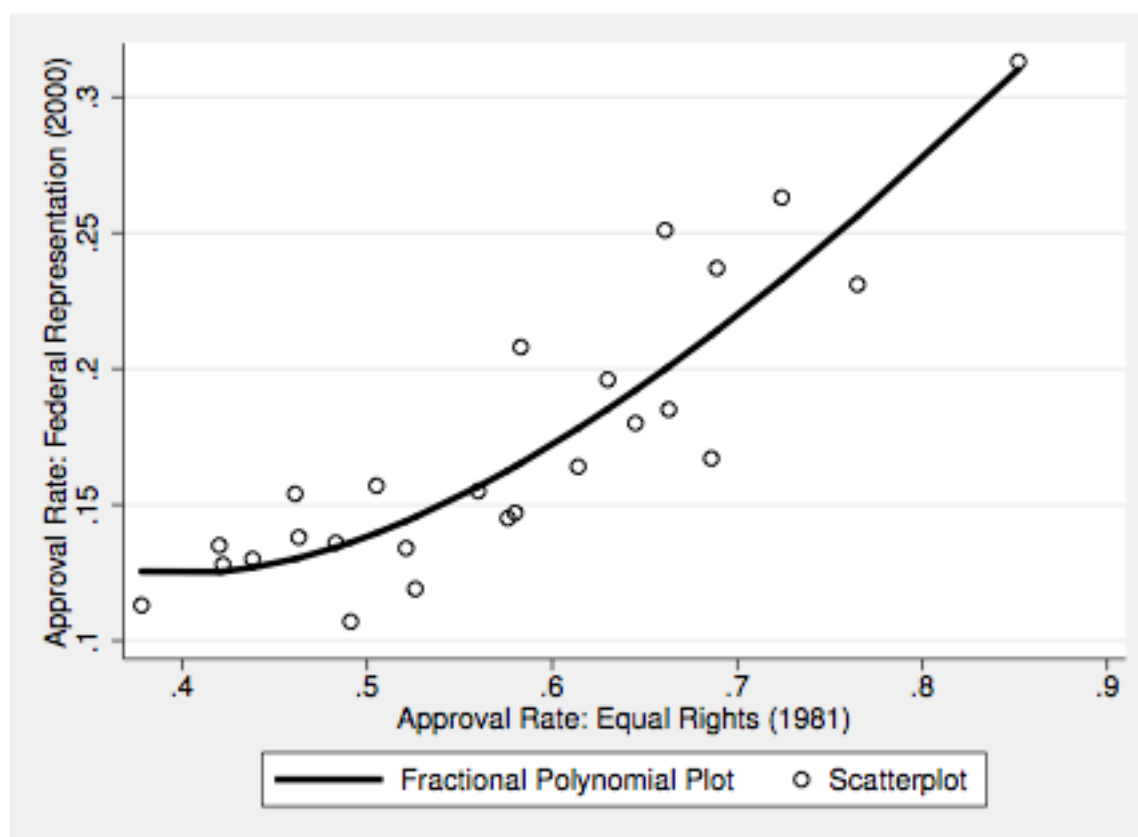
*Table 10. SOCIAL ATTITUDES AND GENDER-SPECIFIC JOB SEGREGATION.*

	Education:	Management (1/0):	Average log pay in occupation:	Performance pay (1/0):
Female	-1.385*** (0.252)	-0.177*** (0.028)	-0.075** (0.030)	-0.0188 (0.035)
Approval Rate: Equal Rights (1981)	0.312 (0.380)	-0.019 (0.048)	0.039 (0.051)	-0.054 (0.053)
Firm fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Observations:	332087	332087	332087	332087

*Notes:* The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. The voting data stem from the Swiss Federal Statistical Office. Non-nested standard errors are calculated at the region and firm level. \* Significant at 10 % level; \*\* Significant at 5 % level; \*\*\* Significant at 1 % level.



## A. Appendix



**Figure A.1:**

### **Relationship between Approval Rates**

*Notes:* The voting data stem from the Swiss Federal Statistical Office.

**Table A.1:**  
**Regional Voter Approval Rates: Equality Rights**

Region	Total votes	In favor	Approval rate
Appenzell Innerrhoden	2529	805	31.8%
Schwyz	20075	7594	37.8%
Glarus	8014	3362	42.0%
Appenzell Ausserrhoden	11244	4743	42.2%
Uri	8265	3616	43.8%
Valais	33084	15237	46.1%
St. Gallen	73620	34073	46.3%
Thurgau	40270	19469	48.3%
Nidwalden	7141	3508	49.1%
Lucerne	67982	34313	50.5%
Aargau	85950	44782	52.1%
Obwalden	5362	2818	52.6%
Graubünden	30054	16830	56.0%
Solothurn	88576	51029	57.6%
Zug	20554	11925	58.0%
Schaffhausen	28591	16673	58.3%
Bern	177168	108695	61.4%
Zurich	266619	168099	63.0%
Fribourg	28936	18674	64.5%
Neuchâtel	30399	20095	66.1%
Ticino	42915	28438	66.3%
Basel-Landschaft	44530	30540	68.6%
Vaud	78446	54073	68.9%
Basel-Stadt	44687	32354	72.4%
Jura	11040	8450	76.5%
Geneva	67536	57507	85.2%

*Notes:* The voting data stem from the Swiss Federal Statistical Office.

**Table A.2:**  
**Regional Voter Approval Rates by Gender**

Region	All		Men		Women	
	Total votes	Approval	Total vote	Approval	Total vote	Approval
St. Gallen	101	63.4	48	56.3	53	69.8
Aargau	69	68.1	36	66.7	33	69.7
Bern	195	74.9	97	66.0	98	83.7
Basel-Landschaft	38	81.6	20	90.0	18	72.2
Zurich	204	82.8	109	79.8	95	86.3
Vaud	122	85.2	57	80.7	65	89.2
Basel-Stadt	54	87.0	27	77.8	27	96.3
Geneva	44	88.6	20	95.0	24	83.3

*Notes:* The voting data stem from the VoxIt.

**Table A.3:**  
**Regional Voter Approval Rates: Federal Representation**

Region	Total votes	In favor	Approval rate
Appenzell Innerrhoden	4283	302	7.1%
Schwyz	41805	4719	11.3%
Glarus	9653	1305	13.5%
Appenzell Ausserrhoden	17760	2273	12.8%
Uri	12827	1670	13.0%
Valais	60886	9405	15.5%
St. Gallen	121818	16859	13.8%
Thurgau	57124	7767	13.6%
Nidwalden	11662	1251	10.7%
Lucerne	106603	16694	15.7%
Aargau	140426	18842	13.4%
Obwalden	9538	1134	11.9%
Graubünden	44773	6945	15.5%
Solothurn	73716	10672	14.5%
Zug	29870	4403	14.7%
Schaffhausen	29836	6215	20.8%
Bern	288654	47248	16.4%
Zürich	339631	66411	19.6%
Fribourg	62694	11298	18.0%
Neuchâtel	36226	9088	25.1%
Ticino	56591	10453	18.5%
Basel-Landschaft	73146	12214	16.7%
Vaud	124920	29548	23.7%
Basel-Stadt	60232	15853	26.3%
Jura	18070	4174	23.1%
Geneva	94429	29571	31.3%

*Notes:* The voting data stem from the Swiss Federal Statistical Office.

**Table A.4:**  
**Observations**

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<i>Individual</i>	
Total	332087
Women	109058
Men	223029
<i>Firm</i>	
Firms	1277
Branches	4457
<i>Branches per firm</i>	
Median	4
Min	2
Max	25

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*Notes:* The voting data stem from the Swiss Federal Statistical Office.

**Table A.5:**  
**Summary Statistics: Entire Sample of Workers**

Variable	All	Female	Male
Log gross monthly wage	8.634 (0.38)	8.409 (0.313)	8.745 (0.361)
Female (Dummy)	0.328 (0.47)	1.000 (0.000)	0.000 (0.000)
Firm entry age	29.841 (8.502)	29.557 (8.917)	29.979 (8.285)
Education in years	12.351 (2.276)	11.515 (1.927)	12.759 (2.321)
Tenure	10.771 (9.053)	8.654 (7.447)	11.806 (9.574)
Union (Dummy)	0.253 (0.435)	0.243 (0.429)	0.259 (0.438)
Married (Dummy)	0.597 (0.491)	0.417 (0.493)	0.686 (0.464)
Weekly working hours	40.734 (2.065)	40.097 (2.952)	41.045 (1.34)
No management position	0.655 (0.475)	0.764 (0.425)	0.602 (0.49)
Lowest management	0.126 (0.332)	0.133 (0.339)	0.122 (0.328)
Lower management	0.134 (0.341)	0.078 (0.269)	0.162 (0.368)
Middle management	0.067 (0.25)	0.022 (0.146)	0.089 (0.285)
Top and upper management	0.018 (0.131)	0.003 (0.054)	0.025 (0.155)

*Notes:* The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. Standard errors are in parenthesis.

**Table A.6:**  
**Summary Statistics: Performance Pay Workers**

Variable	All	Female	Male
Log performance comp.	5.471 (1.240)	5.298 (1.115)	5.549 (1.282)
Log time-based comp.	8.758 (0.404)	8.508 (0.343)	8.863 (0.381)
Female (Dummy)	0.297 (0.457)	1.000 (0.000)	0.000 (0.000)
Firm entry age	29.783 (8.05)	29.203 (8.622)	29.310 (7.796)
Education in years	12.692 (2.418)	11.740 (2.178)	13.093 (2.402)
Tenure	11.776 (8.846)	9.459 (7.446)	12.753 (9.337)
Union (Dummy)	0.195 (0.396)	0.203 (0.402)	0.192 (0.394)
Married (Dummy)	0.627 (0.484)	0.427 (0.495)	0.711 (0.453)
Weekly working hours	40.779 (1.976)	40.124 (2.957)	41.057 (1.268)
No management position	0.548 (0.498)	0.688 (0.463)	0.489 (0.500)
Lowest management	0.143 (0.350)	0.164 (0.37)	0.133 (0.340)
Lower management	0.198 (0.399)	0.116 (0.319)	0.233 (0.423)
Middle management	0.092 (0.289)	0.030 (0.171)	0.118 (0.323)
Top and upper management	0.019 (0.137)	0.002 (0.047)	0.026 (0.160)

*Notes:* The firm and individual data are drawn from the Swiss Earnings Structure Survey 1994-1998. Standard errors are in parenthesis.