I. INTRODUCTION: THE PUZZLE

Occupational sex segregation still persists in most advanced industrial countries. Simply stated, occupational segregation occurs when workers of one sex are disproportionately concentrated in a particular sector of the economy or in a particular occupational category. Vertical segregation refers to the underrepresentation of women in high-status occupations (such as managerial jobs) and their overrepresentation in low-status occupations (such as clerical jobs). Horizontal segregation refers to the under- or overrepresentation of women in some sectors of the economy (such as the manufacturing sector). The concern that fuels much of the discussion on occupational segregation is that women fare economically worse than men because of the types of jobs made available to them. Full gender equality, however, requires

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Trond Petersen and Laurie Morgan, “Separate and Unequal: Occupation-Establishment Sex Segregation and the Gender Wage Gap,” American Journal of Sociology 101 (September 1995); Rachel
more than mere economic parity. In a liberal democracy, citizens ought to be able to choose their occupations regardless of their sex. If there are systematic barriers that narrow the scope of occupational choices for one sex, we need to know what those barriers are and why they persist. If these systematic barriers are the product of political institutions and policies, then political scientists need to pay more attention to the issue of occupational sex segregation.

Notwithstanding the ubiquity of occupational sex segregation, advanced industrial societies vary in the pattern of their sex segregation. The cross-national pattern of segregation poses some genuine puzzles. The high levels of sex segregation in Scandinavian countries, in particular, have long puzzled scholars of occupational segregation. Scandinavian men and women, for instance, tend to be concentrated in male-dominated and female-dominated occupations to a much greater degree than is the case in most other countries. When we focus exclusively on corporate managers, for instance, we find very few women in those positions in Scandinavia. This is highly counterintuitive, given how committed this group of countries has been to gender equality and to the integration of women into the labor force. The issue of occupational segregation has concerned Scandinavian policymakers to such a degree that they have all implemented a new sex quota for corporate boards in recent years. Countries with much less adequate policy support for working mothers, by contrast, score better than Scandinavian countries on a number of measures of sex segregation. North American countries, for instance, have lower levels of sex segregation than do Scandinavian countries. Thus, male-dominated occupations have disappeared to a much greater extent in North American countries than in other advanced industrial societies. By contrast, most continental European countries and Japan show a persistence of male-dominated jobs

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and do not possess much in the way of female-dominated occupations. What explains sex segregation? And, more importantly for students of comparative politics, what explains cross-national variations in the pattern of sex segregation? There are three theoretical categories that might explain occupational sex segregation: economic theories; norm-based theories; and welfare state–focused institutional theories. Before I present my own theory, which builds upon existing economic theories, let me briefly discuss each of aforementioned explanatory categories.

Labor economists have, in turn, developed three more subcategories of explanations for occupational segregation based on human capital, statistical discrimination, and skill atrophy. The human capital explanation attributes gender segregation to women’s inferior human capital. From this perspective, women and their families are seen as investing little in their education because women are expected to spend the bulk of their time at home taking care of their families rather than at work. In other words, low productivity of female labor leads to the underrepresentation of women in high-status jobs. The explanation based on statistical discrimination theory, by contrast, makes simplified assumptions about employers’ behavior. Employers avoid hiring women, it is assumed, because women are more likely than men to quit for family-related reasons (child rearing and the care of elderly parents, for instance). Although many women may prioritize their careers over their families, the high cost of sorting the different commitment levels of potential female employees leads employers to economize on such costs by making hiring decisions on the assumption of women’s higher statistical probability of quitting. The skill-atrophy theory of occupational sex segregation is based on the assumption that some occupations require skills with high atrophy rates—that is, skills that need to be updated frequently due to technological or nontechnological changes. This explanation holds that occupational segregation results from women—who expect to spend a lot of time outside the labor force—choosing occupations that require skills with low atrophy rates. Claudia Goldin, however, suggests in her recent work that employer

discrimination might be attenuated in jobs where credentials matter more.7

While the microlevel mechanisms developed by labor economists offer insights into the causes of sex discrimination in general, they fail to account fully for the specific cross-national variations found in advanced industrial societies. Human capital theory fails to explain why Scandinavian countries, which boast high levels of female educational attainment, have highly segregated labor markets. Nor does the theory of statistical discrimination and atrophy rates explain why sex segregation persists in countries with high rates of female labor-force participation, which itself is an indication of the strength of women’s attachment to the labor market.

Cultural theories—favored by sociologists and some feminist economists—reject the aforementioned economic theories.8 Instead, they emphasize the role of nonrational factors such as employers’ tastes and “cultural norms” about “appropriate” gender roles.9 They also emphasize the importance of socialization processes that affect women’s career choices.10 Nuanced cultural explanations seek to account for both vertical and horizontal sex segregation. From this perspective, sex segregation occurs when certain jobs are culturally stereotyped as being either “feminine” or “masculine.” More specifically, high-status jobs that demand “authority” and manual jobs that demand physical strength are associated with masculine qualities. Gender norms are understood to affect both supply and demand. Strong gender norms thus motivate women to choose more feminine nonmanual and lower-status jobs at the same time as they motivate employers to hire more women for such jobs.

Cultural norms per se, however, do not explain why some countries see only female concentration while others see only male concentration. If gender norms cause women to go into female jobs, then men in

the same country—supposedly holding similarly gender-stereotypical views—would be expected to concentrate in male jobs. For this reason, Maria Charles and David Grusky, who adopt a variant of a cultural explanation, also look at the economic structure. They modify the cultural explanation to take account of structural changes in the economy and predict that gender egalitarianism and postindustrialism are likely to promote women’s integration into the workplace. They find that, contrary to their initial predictions, high levels of gender egalitarianism and postindustrialism correlate with horizontal segregation of women into nonmanual jobs (as in Scandinavian countries). Their findings also indicate that gender egalitarianism significantly reduces vertical segregation within nonmanual sectors of the economy but not in manual sectors. Their interpretation of the empirical findings, however, remains speculative. They explain that residual ideas about gender roles and understanding of individual “competencies” segregate women into nonmanual occupations while men keep manual occupations to themselves. Although this interpretation is in line with the traditional cultural explanation, Charles and Grusky say little about why these residual norms about gender roles persist in otherwise gender-egalitarian societies. They simply state that “equal but different” is normatively compatible with gender egalitarianism. In thinking about why gender egalitarianism attenuates vertical segregation in nonmanual sectors but not in manual sectors, they speculate about two potential explanations, neither of which is cultural. One is that once women enter nonmanual sectors for cultural reasons, their volume helps promote more women into the higher occupational strata. The other explanation is that nonmanual occupations might rely more on “credentials” in hiring, which reduces sex-based discrimination.

These potential explanations, however, raise more questions than they answer. Why does credentialization help women move into higher-status occupations in nonmanual sectors but not in manual sectors? Does it mean that high-status jobs in manual sectors required credentials to a lesser degree? If so, why? Do women fare well in all high-status jobs in nonmanual sectors? Or do they fare well in specific high-status jobs whose entry depends more on credentials? The combination of gender egalitarianism and postindustrialism does not provide answers to these questions, whereas my alternative model, as will be shown, does provide them.

11 Charles and Grusky (fn 3).
12 Ibid., 302.
13 Ibid., 302–3.
A number of scholars, in turn, advocate an institutional explanation, noting that some welfare states produce a particular type of sex segregation. They focus on the role of the welfare state as an employer of female labor. Welfare states that provide generous care services turn women’s previous unpaid work into paid work within the public sector. From this perspective, women-friendly welfare states yield greater concentrations of women by creating lots of public sector care jobs.14 Aside from the female concentration that results from the role of the welfare state as an employer, some scholars interested in measuring the “women friendliness” of welfare states maintain, by contrast, that such policies can actually narrow the gender gap in employment patterns. Janet Gornick and her collaborators, for example, focus on the importance of mother-friendly policies—generous maternity and parental leave and child care provision—in strengthening women’s labor-force attachment.15 Although they make no specific predictions about sex segregation, their argument suggests that the gender gap in work patterns between men and women can be expected to diminish in countries with strong policy support for working mothers. In other words, we should expect low levels of vertical segregation in women-friendly welfare states, despite the higher levels of horizontal segregation of women into care jobs.

Institutional theories also have their limitations, even if they initially appear to address cross-national variations. For instance, at first sight, the role of the welfare state as an employer seems to offer a plausible explanation for Scandinavian female occupational concentration. Looked at more closely, however, the role of the welfare state as an employer per se fails to account for the cross-national variations in the pattern of female concentration. Canada and the United States, which have very different welfare states in comparison with those of Scandinavian countries, nonetheless demonstrate high levels of female occupational concentration. Furthermore, how women-friendly welfare states might affect vertical segregation is ambiguous. Hadas Mandel and Moshe


Semyonov show, for example, that advanced industrial societies with women-friendly welfare policies have smaller numbers of women in high-paying occupations than societies without.\textsuperscript{16}

This article develops an alternative institutional model of occupational segregation that builds upon microeconomic theories. It explains cross-national variations in sex segregation on the basis of institutional differences that affect skill investment decisions of men, women and employers. The model shares the basic premise of the varieties of capitalism literature (hereafter VOC) in assuming that certain types of institutions lock economic actors into long-term relationships that make it possible for workers and employers to commit to “specific assets.”\textsuperscript{17} The upshot of the argument here is that institutions such as employment protection and vocationally based educational systems, which facilitate specific skill investments, generally exacerbate sex segregation by increasing gender skill gaps. The microlevel model of skill investments is a crucial part of my institutional model, as it provides a foundation that enables us to specify which national institutions are of causal interest. In order to distinguish my institutional theory from other institutional theories that focus primarily on women-friendly welfare policies, I refer to mine as a skill-based institutional theory of segregation.

This article also contributes to the VOC literature, which distinguishes between two types of market economies. The so-called coordinated market economies (CMES) are rich in institutions that lock economic actors into long-term relationships. The liberal market economies (LMEs), in contrast, lack such institutions. The findings in this article imply that CMES are generally more gender segregating than LMEs because they have institutions that promote male investments in specific skills. In the same way that feminist scholars have identified previously neglected \textit{gendered} consequences of welfare states, this article identifies the \textit{gendered} consequences of different varieties of capitalism.\textsuperscript{18} In doing so, it generates a new research agenda for the disciplines of both comparative political economy and women’s studies.


\textsuperscript{17} See Peter A. Hall and David Soskice, eds., \textit{Varieties of Capitalism: The Institutional Foundations of Comparative Advantage} (Oxford: Oxford University Press, 2001), introduction. I differ from other authors in the VOC camp in thinking that long-term relationships between employers and workers also facilitate the accumulation of general skills. While Gary Becker argues that employers do not invest in general skills, for reasons that are discussed in this article, labor markets marked by robust internal labor markets de facto turn general skills into quasi-firm-specific skills in terms of their mobility.

\textsuperscript{18} For the feminist critique of the welfare state literature, see Ann Shola Orloff, "Gender and Social Rights of Citizenship: State Policies and Gender Relations in Comparative Research," \textit{American Sociological Review} 58 (June 1993); Mary Daly, "A Matter of Dependency? The Gender Dimension
The remainder of this article is organized in three sections. Section II presents the institutional theory of segregation. Section III empirically tests how well the skill-based institutional model explains different types of sex segregation. And Section IV, the concluding section, summarizes the findings of the article and discusses their theoretical, practical, and normative implications.

II. The Skill-Based Institutional Model of Sex Segregation

The skill-based institutional theory of sex segregation is constructed in three steps. First, this section develops a deductive model of how workers and employers determine their investments in different skills by assuming that both actors are risk averse and that they try to minimize the loss of their investments. Second, it adds an additional institutional tier to the model, by assuming that institutions—such as employment protection—can affect risk calculations by reducing the likelihood of future loss of skill investments. Third, it introduces a gender dimension into the model, by assuming that men and women possess different risk profiles and that employers use workers’ sex as a cue to calculate their own risk of human capital investment. As already mentioned, the micro-level model of skill investments is a crucial part of the institutional model, as it provides a foundation that enables us to specify which national institutions are of causal interest.

Skills and Social Protection

We can assume that workers and employers calculate the merit of human capital investments by taking into consideration the additional earnings that such investments would be likely to yield and the possible risks of such investments. Portability of skills matters greatly in shaping workers’ and employers’ investment risks. Here we can distinguish the different types of skills: firm-specific skills, trade- or industry-specific skills, and general skills. (I use “industry-specific” and “trade-specific” as synonyms.) Firm-specific skills are very limited in their portability,
as, by definition, only the current employer finds them valuable. Both general and industry-specific skills are more portable because employers other than the current employers value them. Portability is especially high when these skills are certified in an objectively recognizable form, for example, by a school diploma or vocational certification. General skills, however, are more portable than industry-specific skills. Risk-averse workers can be expected to care greatly about portability when deciding whether to invest in skills. In seeking to maximize their lifetime earnings by investing in skills, risk-averse workers take into consideration the likelihood of losing their investments. Investment risks of firm-specific skills are the greatest, because they are extremely vulnerable to job termination. We can expect risk-averse workers to be reluctant to invest in these skills, especially when there is a high degree of job uncertainty. Thus, firm-specific skills are vulnerable to job termination, and industry-specific skills are vulnerable to a downturn in the particular industry or sector of the economy. When jobs are insecure, general skills are the only safe investment.

Institutions change workers’ calculations by reducing the investment risks associated with different skills, as suggested by the VOC literature. Strong employment protection makes it less risky for workers to invest in specific skills—of both the firm-specific and the industry-specific type. When the government enforces such protection, it sends a strong signal to workers that their investments in specific skills will be safeguarded. Although employment protection is the only way to assure investments in firm-specific skills, various other institutions can protect investments in industry-specific skills. Thus generous earnings-related benefits for redundant workers—such as unemployment benefits, early retirement pension benefits, and disability benefits—link monetary compensation to the price of skills. In short, these institutions encourage risk-averse workers to invest in specific skills. It also means that in the absence of institutional safeguards, the best strategy for risk-averse workers is to invest in general skills.

Portability matters greatly for employers as well. As Gary Becker argues, it is generally riskier for employers to invest in portable skills, because competitors can then poach their trained workers. For this
reason, Becker expects employers to refrain from investing in general skills. Note, however, that the key determinant of the employers’ decision here is the risk of losing their trained human capital rather than the portability of the skill per se. In other words, as Daron Acemoglu and Jörn-Steffen Pischke argue, when employers are confident that the quit rates of their workers will remain low, they can invest in the workers’ general skills. Employers can, for instance, protect their investments by training their workers in both firm-specific and general skills in order to reduce their mobility. (Workers who have acquired both firm-specific and general skills at the current workplace find it harder to move to other jobs because they will then lose the benefit of the firm-specific component of their skill set.) Having said that, strong employment protection is also important for employers. A governmental commitment to protect employment encourages employers to invest in human capital by assuring that their investments are protected against market fluctuations. Wage subsidies during economic downturns and product market regulation provide examples of employment protection for employers. In the absence of institutional safeguards, however, employers are expected to reduce their human capital investments and rely on external labor markets for the skills and talent they need.

Women-Specific Risks and Employers’ Discrimination

It is reasonable to assume that biological differences and the gendered division of labor at home give rise to women-specific risks. In addition to the risks discussed above, these women-specific risks are expected to influence skill-investment decisions by both employers and women. We can expect risk-averse employers to invest less in women’s human capital because they fear that women are more likely to quit or reduce their work hours due to motherhood and other domestic responsibilities. Greater uncertainties about women’s career patterns increase employers’ risk of losing their sunk costs in training women. Women, in turn, face three gender-specific uncertainties when making career decisions: (1) the risk of dismissal due to pregnancy and other family-related contingencies; (2) the risk of forsaking any return on their skill investments during “voluntary” work interruptions such as child

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23 For a full discussion of policies that protect employers’ human capital investments, see Margarita Estévez-Abe, Welfare and Capitalism in Postwar Japan (New York: Cambridge University Press, forthcoming).
rearing; and (3) the risk of skill depreciation and missed opportunities for continuing skill formation during these work interruptions. In the same way that uncertainties over employment security discourage men from investing in specific skills, women-specific risks are expected to discourage women from investing in specific skills. Firm-specific skills, in particular, present high risks to women who are likely to interrupt their careers. This means, other things being equal, women are more likely to invest in general rather than specific skills partly as a matter of choice and partly because of employers’ discrimination.

As a consequence of these women-specific risks, the institutions that safeguard men’s specific skill investments, such as strong employment protection, will not be sufficient to safeguard women’s skill investments. On the contrary, we can expect such institutions to exacerbate sex segregation. Strong employment protection makes female labor more costly for employers—particularly in the private sector, where employers are governed by the profit motive. Strong employment protection, while promoting employers’ investments in male human capital, exacerbates employers’ discrimination against women. The relative advantage for men and disadvantage for women leads to greater levels of occupational segregation in countries with strong employment protection.

When strong employment protection is in place, even institutions designed to insure against women-specific risks such as pregnancy and child-rearing responsibilities may not be enough to close the sex gap in skill-acquisition opportunities. Worse still, generous paid leave policies for working mothers can, paradoxically, exacerbate sex segregation. Unlike public child care provision—or public subsidies for private child care—long paid leaves impose costs on employers. Even if employers do not shoulder the actual financial burden of paid benefits, long leaves impose extra costs on employers who must manage the temporary manpower slack caused by workers going on leave. Moreover, when leaves are long—a year or longer—employers also need to manage the smooth reintegration of workers when they return. These extra costs can be expected to be higher when there is strong employment-protection legislation in place. To illustrate this point, let us consider the following two ways in which employers may cope with human resource management needs that arise in relation to generous leaves. One option is to hire replacement workers; the other option is to redistribute the workload among existing employees. Strong employment-protection legislation, however, makes it difficult for employers to hire and fire temporary replacement workers. Moreover, when workers have firm-specific skills, it is impossible to replace them with temporary workers.
because firm-specific skills are not available in the external labor market. It follows from this that, in countries with strong employment protection, the second option (work distribution) is the only one available for employers. Nonetheless, the second option, too, has its problems. The more women an employer hires, the greater the possibility that a large number of employees will want to take time off from work at any given moment. Distribution of work within the firm excessively burdens those employees who remain. For this reason, an employer needs to hire more personnel than necessary in anticipation that a certain percentage of female workers will be on leave. Cost-conscious private sector employers in countries with strong employment protection can thus be expected to avoid hiring women in their childbearing years.

**Employers and the Skill-Formation Process**

The preceding sections of this article have described a micrologic of skill-investment decisions by women and employers. The core arguments are as follows: (1) other things being equal, specific skills are disadvantageous to women, because women face greater risks than men in investing in those skills; and (2) employers’ discrimination against women is exacerbated when strong employment protection is in place. This section turns to different institutional arrangements for skill formation.

For women, the manner in which skills are acquired matters just as much as the nature of the skills acquired. The critical dimension is employer involvement: some forms of skill acquisition involve employers directly (for example, on-the-job training and apprenticeships), while others do not involve employers at all (school-based training). Based on the micrologic of employers’ risk calculations, we can expect that employers who invest in their workers’ skill formation will be more discriminatory against women. It follows from this that women can be expected to have less access to employer-provided training such as on-the-job training and apprenticeships.\(^{24}\) In contrast, school-based education and training provide more gender-neutral opportunities for women to invest in their own human capital.

Depending on how skills are acquired, we can expect different degrees of skill gap between the sexes—gaps that, in turn, lead to occupational segregation. Firm-specific skills are always acquired through on-the-job training, while industry-specific skills may be acquired through apprentice-

\(^{24}\) Employers who take in apprentices have an interest in making sure that apprentices complete the contract (and in many cases stay on to work for more years). They are thus more likely to take in male apprentices when there are enough male applicants. Apprenticeships are likely to be gender segregating precisely because they involve employer-provided on-the-job training.
ships or vocational schools (or some combination of both). General skills are acquired both through on-the-job training and through schooling. Firm-specific skills and industry-specific skills whose training takes the form of apprenticeships are the most disadvantageous for women, because their acquisition involves employers who are likely—purely on the basis of economic cost calculations—to be biased against women. (Insofar as there exists a pool of male employees, the incentive of these employers to take in women will remain low.) Any credentials and qualifications—whether general skills or more specific professional degrees—that can be attained by enrolling in school programs are the least disadvantageous for women, because there is no employer involvement in controlling access to skill training. Vocational schools are thus expected to be more gender neutral than apprenticeships.

When job entry and promotion to higher occupational categories are based on qualifications attainable through schools and exams, women can be expected to have a better chance of achieving gender parity. High school diplomas, university degrees, law degrees, and MBAs all provide examples of school-based general education. Medical schools and law schools provide ways for people to acquire the necessary skills for prestigious occupations. Bar exams offer men and women the chance to gain credentials required for entering high-paid legal occupations. When jobs require school-based credentials, the scope of employers’ discrimination against women’s entry is reduced. Lawyers and physicians would provide the best cases of high-status occupations of this category. In contrast, when job entry and promotion into higher job categories are dependent on skills acquired on the job—whether specific or general skills—women can be expected to face greater hurdles. In short, patterns of sex segregation can be expected to reflect these differences in the process of skill acquisition.

**HYPOTHESES**

On the basis of the account of the micrologic of workers’ and employers’ motivations coupled with the account of the institutional context of these motivations, we can derive a set of predictions about patterns of sex segregation. This section summarizes these predictions into six hypotheses.

**WOMEN AND VOCATIONAL TRAINING**

**H1a.** Women can be expected to invest less in industry-specific skills relative to men in the same country.

**H1b.** The micrologic in this article predicts that employer-provided training is less advantageous to women. Women can thus be expected to be underrep-
resented in apprenticeship programs to a greater degree than in school-based vocational training programs relative to men in the same country.

WOMEN AND HORIZONTAL SEGREGATION

H2a. The importance of vocational training and strong employment protection are expected to exacerbate the skill gap between the sexes by encouraging and protecting male investments in specific skills. Such a skill gap is expected to reduce employers’ demand for female labor, leading to underrepresentation of women in the labor market and in skill-intensive sectors, in particular.

H2b. Generous leave policies for women are expected to exacerbate the underrepresentation of women in the private sector.

WOMEN AND VERTICAL SEGREGATION

H3a. The number of women is expected to be fewer in those high-status jobs that require employer-provided training, such as corporate managers, than in credential-based high-status jobs, such as lawyers and physicians, that use school- and exam-certified skills as an entry requirement.

H3b. Employment protection, by promoting employer-provided vocational training, exacerbates vertical segregation in firms.

III. EMPIRICAL EVIDENCE: EXPLAINING OCCUPATIONAL SEGREGATION

This section examines the validity of the three sets of hypotheses presented in the previous section by means of cross-section analyses of advanced industrial societies using tabulations and OLS regressions. Although twenty advanced industrial countries (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, U.K., and U.S.) were initially included in the study, the lack of comparable data for some countries results in fewer observations in actual OLS regression analyses.25 Despite the best effort to increase the sample size, the sample varies from fourteen to eighteen countries, depending on the availability of the variables for the specific hypothesis under examination.26 Otherwise noted, the data used in this section are

25 Comparable occupational data—and gender breakdown—are not always available; for a good account of data problems, see Anker (fn 1).

26 Anker’s data do not contain figures for female occupational concentration for Belgium, Denmark, and Ireland. The percentage of women in manufacturing has not been attained for the Netherlands, New Zealand, Norway, and Switzerland. The percentage of women in the private sector is not available for Australia, Ireland, Luxembourg, and Switzerland. Employment protection legislation index for Luxembourg is not available. Gender attitude variable is not available for Australia, Luxembourg, New Zealand, and Switzerland. Although Anker includes data for Italy on the number of women and men in managerial positions, Italy has been dropped from the analysis in this article because the number of small family-owned companies in Italy seems to have inflated the number of women in managerial positions. This decision was made after consulting economists at the Bank of Italy.
all figures from the early 1990s. The early 1990s have been selected as
the base years, because these are the earliest years for which high-quality
comparable data on occupational segregation (Richard Anker’s data) are
available for the largest number of advanced industrial countries. As we
see from Maria Charles and David Grusky’s study based on their more
recently assembled occupational data for ten advanced industrial countries,
the overall structure of segregation still persists today. Although I have
conducted a study of subsequent changes elsewhere, the main concern
of this article is to offer a simple deductive model that can explain part
of the cross-national variations in sex segregation.

WOMEN AND VOCATIONAL TRAINING

Hypotheses 1a and 1b predict that specific skills are biased against
women—particularly when employers offer the training. This article
examines these hypotheses by measuring how much larger the share
of men with vocational degrees and apprenticeships is compared with
the share of women with similar qualifications. Given that vocational
schools and apprenticeships are the two most representative ways in
which industry-specific (or trade-specific) training takes place, com-
paring the gender gap in the share of people with vocational degrees
and apprenticeships provides a good way to test these hypotheses. The
greater scope of employer involvement in apprenticeships means that
women are more likely to be underrepresented in apprenticeship pro-
grams than in school-based training.

Table 1 compares the relative importance of vocational education in
twenty advanced industrial countries and the gender gap in investment
in vocational education for a subgroup of these countries, respectively,
for which the data are available. The second and the third columns
specifically compare the gender gap in the percentage of people with
vocational degrees and the percentage of people who have completed
apprenticeships respectively. The two hypotheses presented earlier—
women are likely to underinvest in industry-specific skills, especially
when training is provided via apprenticeships—appear to hold, at least
in the countries where the relevant data are available. As the second col-
umn of Table 1 demonstrates, women lag behind men in their invest-
ment in industry- or trade-specific skills to a greater degree in twelve
of the fourteen countries for which comparable data are available. For

27 UNESCO also offers international educational data of gender breakdown of vocational and general
education. Unfortunately, UNESCO provides the gender breakdown for fewer countries (Japan, Austria,
Denmark, Finland, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, and Switzerland).
UNESCO data also show that there are fewer women on vocational tracks than men. UNESCO, “Secondary
instance, nearly 13 percent more men than women engage in vocational training. In only two countries, Ireland and the U.S., does the share of women who have invested in vocational education exceed that of men. These two countries, however, happen to be the ones where specific vocational degree and training are least important in the labor market, as so few people pursue them (see Table 1, column 1).

It is important to emphasize that the model here does not imply that women always underinvest in education. Rather, it predicts women’s disincentive to invest in “riskier” specific skills and their preference for general skills. Even when women invest in vocational education,
they appear to invest in more general vocational training. The United Nations Educational, Scientific and Cultural Organization (UNESCO) provides qualitative information that supplements the information provided in Table 1. The UNESCO data include information of gender breakdown by field of vocational training for a subgroup of advanced industrial countries (unfortunately, most of the English-speaking countries are excluded). In these countries, the median percentage of female enrollment in vocational education programs for home economics and “crafts, industry and engineering” were 90 percent and 13 percent, respectively. Only in Ireland (again an outlier) do women outnumber men in “craft, industry and engineering” programs. The UNESCO data indicate that even when women hold a vocational degree, its skill content often tends to be of a general kind, in the sense that it lacks a close link to a very specific occupation (such is the case, for instance, with home economics). This information lends support to the argument developed in this article, namely, that women have an incentive to pursue general skills rather than more specific skills. This is also consistent with the trend since the 1980s in most advanced industrial societies, where the share of women in general education facilities (senior high schools and universities) has been rising.

Let me now turn to apprenticeships. In order to ascertain whether women do indeed face greater difficulties getting into apprenticeship programs due to employer discrimination, this article compares the percentages of men and women who have completed apprenticeship programs. Although apprenticeships exist in many countries, they are more formalized in some countries than in others. For this reason, official statistics are available only for a small number of counties. The Luxembourg Income Study provides data on apprenticeships for Australia, Austria, Denmark, Germany, Ireland, Luxembourg, and Switzerland (see Table 1, column 3).

The data show that women lag behind men in all six countries. Australia, Austria, and Denmark show particularly large gender gaps. Detailed country reports further confirm the gender-biased nature of apprenticeships. Country reports compiled by the Organization of Economic Cooperation and Development (OECD) and the European Center for the Development of Vocational Training (CEDEFOP) identify Australia, Austria, Germany, and Switzerland as countries with formalized apprenticeship programs. In all of these countries, women are

28 UNESCO (fn. 27).
underrepresented in apprenticeship programs; and most programs are either predominantly male or female.  

**WOMEN AND DIFFERENT TYPES OF HORIZONTAL SEGREGATION**

This section examines *horizontal* rather than *vertical* segregation. **Hypothesis 2a** predicts that the importance of vocational training and strong employment protection are likely to reduce demand for female labor—especially in skill-intensive sectors. **Hypothesis 2b**, in turn, predicts that a generous leave policy exacerbates underrepresentation of women, especially in the private sector. Employment protection is expected to negatively affect employers’ desire to hire women; and generous leaves, in turn, are expected to exacerbate such a negative effect. As argued earlier, this negative effect is more likely to be observed in the private sector than in the public sector, because public sector employers do not face the same profit motives as private sector employers.

I test these hypotheses by examining whether the independent variables of interest here—the degree to which vocational training is important; the degree of employment protection; and the measure of the generosity of paid maternity and parental leaves—have any effects on (1) representation of women in skill-intensive manufacturing; (2) representation of women in the private sector; and (3) concentration of women in female jobs.

**UNDERREPRESENTATION OF WOMEN IN MANUFACTURING**

Table 2 presents the results of OLS regressions that examine factors influencing the underrepresentation of women in manufacturing of durables. The dependent variable is the share of women in a subset of manufacturing industries for durables. Light industries have been omitted because light industries such as textiles typically are more feminized and thus their relative size in manufacturing biases the share of women in a more favorable direction. For the purpose of the study here, it makes more sense to focus on the male-dominated durables sectors of manufacturing generally associated with more skill-intensive manufacturing. These durables sectors provide a better case for examining how the process of skill formation in different countries affects sex ratios.

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29 German apprenticeship programs have always been extremely gender segregated: when we look at the most popular five programs among men—all of which are craft skills—we find that 98 percent of enrollment is male. Austria is similar. See Cedefop, ed., *Vocational Training in the Federal Republic of Germany* (Berlin: The European Center for the Development of Vocational Training, 1991); *Cedefop, ed., Vocational Training in the Federal Republic of Germany* (Berlin: The European Center for the Development of Vocational Training, 1995); *Cedefop, ed., Vocational Education and Training in the Republic of Austria* (Thessaloniki, Greece: The European Center for the Development of Vocational Training, 1995).
The independent variables include (1) the importance of vocational training, (2) the degree of employment protection, (3) the generosity of paid maternity and parental leaves, (4) the pervasiveness of traditional gender norms, and (5) female labor-force participation rates. The first three independent variables are derived from the hypotheses presented earlier: the first two variables are more crucial to the overall effectiveness of the model, while the third is more derivative. The last two are included to test the alternative hypotheses discussed in the first section.

The measure of traditional gender norms tests the effect of cultural norms on the share of women in durables. The cultural theory predicts that the stronger the traditional gender norms, the fewer should be the number of women in durables, which are considered “masculine”

<table>
<thead>
<tr>
<th>Table 2</th>
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<tr>
<td><strong>OLS Regressions Results for % of Women in Manufacturing of Durables</strong></td>
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</tbody>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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</thead>
<tbody>
<tr>
<td>Importance of Vocational Education</td>
<td>-.297**</td>
<td>-.273**</td>
<td>-.353**</td>
<td>-.275*</td>
</tr>
<tr>
<td>Employment Protection</td>
<td></td>
<td></td>
<td></td>
<td>.058</td>
</tr>
<tr>
<td>Attitudes for Traditional Gender Roles</td>
<td>.291</td>
<td>.359</td>
<td>.293</td>
<td></td>
</tr>
<tr>
<td>Generosity of Family-Related Leaves</td>
<td></td>
<td></td>
<td>.687</td>
<td></td>
</tr>
<tr>
<td>Female Labor-Force Participation Rate</td>
<td>.0734</td>
<td>.0598</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>31.82**</td>
<td>19.251</td>
<td>17.436</td>
<td>18.883</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>.33</td>
<td>.31</td>
<td>.30</td>
<td>.23</td>
</tr>
<tr>
<td>N</td>
<td>16</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

*p ≤ .10; **p ≤ .05; ***p ≤ .001


The higher the Employment Protection Legislation Index (EPL), the stricter the regulation against dismissal. Attitudes for traditional gender roles are measured as the percentage of population that strongly believe that men have greater right to jobs when jobs are scarce. Generosity of Family-Related leave is measured by converting the number of paid statutory maternity and other family care leaves into the number of fully paid weeks.
sectors of the economy. The female labor-force participation rates are proxies for women's labor-force attachment to test hypotheses based on statistical discrimination and skill atrophy. If it is simply women's weak labor-force attachment that dissuades employers from hiring and/or training women, we should observe stronger effect of female labor-force participation rates on the percentage of women in the skill-intensive manufacturing sector.

A few words on the measurements are in order. The relative importance of vocational training is measured as a share of the population with vocational degrees. The OECD index of employment-protection legislation is used as a proxy for the degree of employment protection. The generosity of leaves is measured in terms of the number of fully compensated days for maternity and child care time off. As for the relative strength of the belief in traditional gender roles, I have adopted the same measure of gender egalitarianism used in the study by Charles and Grusky discussed earlier. It measures the pervasiveness of traditional gender roles in terms of the share of people who, according to the World Values Survey, consider that men have a greater right to jobs when jobs are scarce. The female labor-force participation rates come from OECD sources.

Table 2 reports the regression results. The relative weight of vocational training is the only variable that is consistently significant, and its effect is negative, as expected. (The stronger the emphasis on vocational training in a country, the fewer the number of women in durables.) Due to the limited sample size, I have opted to keep the number of variables as small as possible in each regression model. Regressions using one variable at a time yielded significant results only for the vocational training variable and not for any of the others—that is, employment protection, the generosity of leaves, the gender norms, and the female labor-force participation variable. Separate regression models included the variables associated with the alternative hypotheses. Interestingly,

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31 It converts the number of paid leave days into fully paid days. Meyers, Gornick, and Ross have devised an index to measure the mother friendliness of welfare states. I do not use it here because it is a composite index that lumps together policies that reduce women's time-off work (that is, public child care provision) and policies that financially compensate for their time off (that is, paid maternity and child care leaves). For the purpose of this study, it is important to distinguish the potential effects of policies that reduce women's time off from the effects of policies that provide financial incentives to take time off. See Marcia K. Meyers, Janet C. Gornick, and Katherin E. Ross, “Public Childcare, Parental Leave and Employment,” in Diane Sainsbury, ed., Gender and Welfare State Regimes (New York: Oxford University Press, 1999).
even though one would expect the female labor-force participation rates to positively affect the share of women in manufacturing, they do not. Both gender roles and generosity of leaves have signs contrary to expectation, yet they are not statistically significant.

The inclusion of the employment protection variable along with the vocational training variable, however, reduces the significance of the vocational training variable. Although employment protection has not yielded a significant result, it could still be related to the vocational training variable as implied in the skilled-based institutional theory. But no direct implication can be derived from the regression analysis here. In order to explore the link between vocational training and employment protection further, it helps to look at how actual countries cluster.

Figure 1 plots countries along two dimensions: the horizontal axis indicates the importance of vocational training; and the vertical axis shows the share of female employment in the manufacturing of durables. The figure gives us a sense of where specific countries are located. It shows the relationship between the share of women in manufacturing of durables and the relative importance of vocational education in sixteen countries for which the relevant variables are available. There is an interesting result here, which bears in an important way on the VOC literature. Figure 1 shows that CMEs (Belgium, Denmark, Finland, Germany, Luxembourg, and Sweden) cluster in the more segregating bottom right of the graph—fewer women in manufacturing—while most LMEs (Australia, U.K., and U.S.) are found at the less segregating top left. In the mixed cases such as France, Italy, and Spain, the expected effect of vocational training system appears much weaker.

As the VOC literature argues, when institutions are geared toward sustaining a vocationally oriented educational and training system, manufacturers are more likely to use such abundant skills in their product market strategies. In other words, a feedback loop of sex segregation might exist, whereby the existence of gender-segregating vocational training makes a large number of employers capitalize on abundant male industry-specific skills. Such a feedback loop is, in turn, likely to reduce the demand for female labor in subsectors of the economy or even in the economy as a whole, as we shall examine next. It is noteworthy that Japan—a country often overlooked in recent contributions to the VOC literature—and ostensibly a prototypical CME, clusters with LMEs in this figure. Unlike other CMEs, Japanese schools are primarily for general education and provide very little vocational training. In spite of strong employment protection, it appears that the absence of
vocational tracks in the national education system makes even the otherwise “masculine” durables sectors more open to women.

A skeptic might argue that self-selection of men and women must be at play especially in underrepresentation of women in the durables sector: women choosing not to go into manual sectors. Such a sex-based preference, however, does not explain why the percentage of women in durables sectors varies so widely among advanced industrial societies. Sex-based preferences are expected to be similar across countries. Even if they were different from country to country, note that the vocational training variable is still significant when controlled for gender norms. Although some kind of sex-based self-selection is likely, given the way children are socialized, it is the case that women do not necessarily shy away from well-paid manufacturing jobs. Even in Sweden, where we observe relatively few women in the durables sector, the applicant pool for assembly-line jobs in a very “masculine” truck company, for in-

**FIGURE 1**

**VOCATIONAL EDUCATION AND WOMEN’S SHARE OF MANUFACTURING**

**SOURCES:** Weight of vocational education (Estevez-Abe, Iversen, and Soskice, fn. 19) supplemented by LIS data for Spain and Luxembourg. Data for women’s share of manufacturing of durables have been calculated from LIS supplemented by Japanese Labour Force Survey.
stance, is 50 percent women. The interview with a personnel manager revealed, however, that the company hired mostly male applicants.32

UNDERREPRESENTATION OF WOMEN IN THE PRIVATE SECTOR

Table 3 examines the degree to which vocational training and employment protection reduce the economy-wide demand for female labor by exacerbating women's disadvantages in acquiring specific skills. In addition to the variables included in Table 2, I have also included the following additional independent variables: the gender gap in educational level and the size of the service sector. The gender gap in educational level has been added as a way of testing the alternative human capital theory that simply focuses on gender gaps in the amount of education rather than on qualitative differences between the sexes. It could be that private sector employers hire more men because men are better educated. If so, the pattern of underrepresentation of women in the private sector will correlate with the gender gap in human capital. This variable is measured as the ratio of women with tertiary degrees relative to men. The size of the service sector has been added as a control. The conventional wisdom is that the service sector is more women friendly than the manufacturing sector. In other words, the size of the service sector may be affecting demand for female labor in the private sector. As a control for the number of women in the labor force, I have also included the female labor-force participation rates as it was done in Table 2. Because the service sector size and the female labor-force participation rates are two variables likely to be associated with the greater number of women in the labor market, I have included each of them separately in the models.

The cultural norms variable, however, has not been included in any of the models in Table 3 because cultural theories do not make any specific predictions about how gender norms might affect the ratio of women in the private sector. Cultural theories merely imply that traditional gender norms are likely to reduce overall female labor-force participation rates. The inclusion of the female labor-force participation rates in a subset of the models in Table 3 should therefore capture any indirect cultural effect. As shown, however, the female labor-force participation rates have no effect on the ratio of women in the private sector.

Table 3 shows a negative and consistent effect of employment protection. Yet the other variables—including the vocational training variable—are not statistically significant. Counterintuitively, neither the size of the service sector nor the female labor-force participation rates

32 Interview conducted by the author at Volvo Truck headquarters, Gothenberg, Sweden.
correlate positively with the share of women in the private sector. Both variables possess negative signs counter to conventional expectations, although these are not significant. The vocational training variable becomes significant in an expected direction (negative) only when the vocational training, employment protection, and female labor-force participation rates are in the model. Dropping the vocational training variable improves the significance on the negative effect of employment protection on the share of women in the private sector.

Figure 2, following the results of Table 3, plots actual countries on two dimensions: the degree of employment protection on the horizontal axis and the share of women working in the private sector on the vertical axis. Again it is striking that we can observe the CMEs clustering...
in the bottom right, while the LMEs are in the top left. As mentioned already, CMEs mostly consist of countries where vocational training is emphasized and institutionally reinforced, while LMEs consist of countries with little focus on systematic public vocational training.

**FEMALE CONCENTRATION IN FEMALE-DOMINATED OCCUPATIONS**

Table 4 turns to the analysis of cross-national patterns of female concentration in female-dominated jobs. Here I have adopted Richard Anker’s measure of women’s concentration in a female-dominated occupation as the dependent variable. This measures the percentage of female workers employed in occupations where more than 75 percent of the workforce is female. Although a similar index for male-dominated occupations includes too heterogeneous a range of occupations and thereby blurs the distinction between horizontal and vertical segregation, female-dominated occupations are far fewer and more homogeneous.

The independent variables include (1) importance of vocational
training; (2) employment protection; (3) generosity of leaves; (4) service sector size; (5) traditional gender roles, and (6) female labor-force participation rates. While Table 4 includes all the variables used earlier to explain the previous two types of segregation, its results differ significantly from the earlier two sets of regression analyses shown in Tables 2 and 3. Neither vocational training nor employment protection has any significant effects. Vocational training shows a significant effect in an expected direction (that is, more vocational training, more concentration) when controlled only for the size of the service sector. Its effect disappears once other variables such as generosity of leaves, traditional gender norms, and female labor-force participation rates are included.

Service sector size, generosity of leaves, gender norms, and female labor-force participation rates all correlate with the high degree of concentration of women in female-dominated occupations. The regression

<table>
<thead>
<tr>
<th>import</th>
<th>VOCATIONAL EDUCATION</th>
<th>EMPLOYMENT PROTECTION</th>
<th>SERVICE SECTOR SIZE</th>
<th>TRADITIONAL GENDER ROLES</th>
<th>GENEROSITY OF FAMILY-RELATED LEAVES</th>
<th>FEMALE LABOR-FORCE PARTICIPATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-70.207*</td>
<td>-95.553**</td>
<td>-105.380**</td>
<td>-42.587*</td>
<td>-6.049</td>
<td></td>
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<td>N</td>
<td>17</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

* *p ≤ .10; **p ≤ .05; ***p ≤ .001.

SOURCES: The data for the share of women working in female-dominated occupations are based on Richard Anke (fn. 1); data on public sector employment size come from Evelyne Huber and John Stephens, Development and Crisis of the Welfare State: Parties and Policies in Global Markets (Chicago: University of Chicago Press, 2001), table A.7; for the rest of the variables, see notes for Table 2.

Because Public Sector Size produced no result, I have included only results for Service Sector Size and Female Labor-Force Participation Rates. When looking only at CMEs (nine countries), the size of the public sector and the generosity of leave have statistically significant effects.
results support the finding by Charles and Grusky that the interaction of postindustrialism (that is, service sector size) and gender egalitarianism exacerbate female concentration in nonmanual sectors. Greater concentration of women in female-dominated occupations correlates positively with the service sector size, gender egalitarian norms, and the female labor-force participation rates. (Note that the sign in Table 4 appears as a negative on traditional gender norms.) Having said that, the results also imply that these variables are interlinked. Some significant effects disappear depending on which of these variables are simultaneously in the model. Service sector size and female labor-force participation rates, on the one hand, and gender norms and female labor-force participation rates, on the other hand, highly correlate with one another. Charles and Grusky, however, provide little insight into how and why these variables might be correlated.

Institutional studies of the welfare state offer insights for interpreting the results. They suggest that women-friendly welfare states—like the ones in Scandinavian countries—boost female labor-force participation rates by hiring women as caregivers. In such cases, we can expect women to be concentrated in public sector service occupations. Moreover, this type of occupational concentration is likely to be highly consistent with gender egalitarianism—a belief that both men and women should work. However, when the service sector size variable is replaced with the public sector size, the public sector size does not yield any significant result nor does it affect other variables (results not shown here). This seems to be caused by the fact that the actual occupational composition of public sector jobs varies significantly from country to country. It is possible that in Scandinavian welfare states, though not in other types of welfare states, the public sector correlates strongly with the size of the service sector.

Figure 3 further explores whether the effect of public sector size might vary from one type of economy to another. As shown earlier, employment protection reduces the number of women in the private sector. A political decision to boost female labor-force participation by hiring women as care providers in the public sector is thus likely to make a greater difference in countries with few private sector job opportunities for women. In countries where few women work in the private sector, such a political decision is likely to crowd female labor into the public sector. As demonstrated earlier, CMEs generally offer much stronger employment protection than LMEs and have fewer women in the private sector. On the basis of that finding, Figure 3 plots CMEs in my sample along the two dimensions: public sector size on the horizontal axis and the degree
of female occupational concentration on the vertical axis. In fact, CMES with larger public sectors have a higher occupational concentration of women, suggesting that the size of the public sector does make a big difference in providing women with employment opportunities when the private sector discriminates against women. Interestingly, a similar scatter plot of LMEs shows no correlation between the public sector size and female concentration. The degree of female occupational concentration in LMEs thus seems to be driven by the size of the service sector rather than by the size of the public sector.

WOMEN AND VERTICAL SEGREGATION

The microlevel logic presented in this article suggests that women face greater resistance in breaking into high-status jobs when job qualifications are based on skills acquired in the workplace rather than on credentials (hypotheses 3a and 3b). Table 5 examines whether or not strong employment protection leads to the underrepresentation of
women in managerial occupations. Managerial occupations provide the best category of high-status occupation and thus are the best means to explore the gender-segregating effect of employment protection, because strong employment protection promotes internal labor markets. Internal labor markets, where training occurs on the job, are most likely to exacerbate employers’ discrimination against women. Hiring practices for managerial occupations differ more across countries than do more clearly credential-based high-status occupations such as lawyers and physicians. The logic of this article thus predicts that strong employment protection, which protects men’s investment in firm-specific assets and encourages employers to investment in male human capital, will negatively affect women’s advancement into managerial occupations (hypothesis 3b).

Table 5 reveals the significant impact of employment protection—even when controlling for service sector size, gender gap in human capital, cultural attitudes, generosity of leaves, and female labor-force participation rates. The variable for generous leaves has a negative sign, which suggests that generous leaves do not promote female representation among

<table>
<thead>
<tr>
<th>Table 5</th>
<th>OLS regressions results for % of female managers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Service Sector Size</td>
<td>.243</td>
</tr>
<tr>
<td>Attitudes for Traditional Gender Roles</td>
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<tr>
<td>Generosity of Family-Related Leaves</td>
<td>–.0001</td>
</tr>
<tr>
<td>Female Labor-Force Participation Rate</td>
<td>.212</td>
</tr>
<tr>
<td>Constant</td>
<td>41.360***</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>.46</td>
</tr>
<tr>
<td>N</td>
<td>18</td>
</tr>
</tbody>
</table>

*p ≤ .10, **p ≤ .05, ***p ≤ .001.

Sources: The share of women in managerial occupations has been calculated on the basis of the data published in Anker (fn. 1), except for the U.K. and Switzerland. The data for the U.K. and Switzerland are based on the Luxembourg Income Study; for the rest of the variables, see notes for Table 2.
managerial occupations. Nonetheless, this variable remains insignificant. Figure 4 plots the countries along the two dimensions of women’s representation and employment protection. We observe yet again that most CMEs cluster at one end—the bottom right—while LMEs cluster at the top left.

Although this section reports on private sector managers, evidence of vertical segregation within the Swedish civil service demonstrates a similar pattern in the public sector. According to the Swedish data in the Luxembourg Income Study, men are overrepresented in the top civil service tier while women are overrepresented in the bottom tier.33 This

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33 Not only are women underrepresented in the top tier of the Swedish civil service, but women in the public sector typically receive salaries significantly lower than those for private sector jobs. As Gornick and Jacobs demonstrate, the worse the public sector wages compared with private sector wages, the more numerous are the women in the public sector. In other words, even in the otherwise egalitarian Sweden, public sector employment does not necessarily promote gender equality. See Janet Gornick and Jerry Jacobs, "Gender, the Welfare State, and Public Employment: A Comparative Study of Seven Industrialized Countries," American Sociological Review 63 (October 1998).
contrasts starkly with Sweden’s success in electing a large number of female politicians by the use of its proportional representation system.34

As a way of providing evidence that job entries based on certified skills are more gender neutral, Figure 5 contrasts how women fare in different high-status occupations in two countries, Japan and Spain. These are the two countries in the sample with (1) the worst underrepresentation of women in managerial occupations; (2) strong employment protection and rigid internal labor markets; and (3) meager support for working mothers. Figure 5 demonstrates that, even in these two countries where women face substantial hurdles, women do much better in high-status jobs, such as physicians and lawyers, that are based on credentials. Both of these occupations, unlike corporate managers, require skills that can be acquired via tertiary education and certified authoritatively.

IV. CONCLUSION AND IMPLICATIONS FOR FUTURE RESEARCH

This article has presented a new institutional model of sex segregation in advanced industrial societies. The central argument is that countries with institutions that facilitate specific skill investments—strong employment protection and vocationally oriented educations systems—are more likely to exacerbate gender gaps in skill investments. Is it argued, further, that such gender gaps in skills exacerbate occupational segregation by sex. It has also provided a logic according to which generous leave policies are unable to counteract the gender bias of labor-market institutions.

This article provided empirical evidence for (1) women’s underinvestment in specific skills, especially when employers are involved in skill training; (2) the effect of strong employment protection in influencing underrepresentation of women in the private sector and in managerial positions; (3) the relationship between vocational training systems and the underrepresentation of women in skill-intensive manu-

facturing. Although these findings validate the core argument put forth in this article, it has found no evidence as to whether generous leave policies exacerbate employers’ discrimination against women. It is also important to note that the institutional model of this article generated no significant result in explaining the degree of female concentration in female-dominated occupations.

The institutional model presented here has performed much better, in comparison with possible alternative theories, in accounting for the cross-national variations in the likelihood that women will break into male occupations. Cultural norms, human capital, service sector size, women’s labor-force attachment, and women-friendly welfare policies did not account for the cross-national patterns of occupational segregation—neither in terms of underrepresentation of women in the private sector nor in skill-intensive manufacturing.

In contrast, when it comes to female occupational concentration, variables such as traditional gender norms, women-friendly welfare policies, service sector size, and female labor-force participation rates mattered more than labor-market variables such as employment protection.

**Figure 5**

**Japanese and Spanish Women in Different High-Status Occupations**

Sources: For Spain, Encuesta de Población Activa. Datos Históricos. INEbase. www.ine.es/inebase/cgi/axi; Ministry of Health, Instituto de Información Sanitaria; Colegio de Abogados de Barcelona. For Japan, Cabinet Office, Labor Force Survey; Ministry of Health, Labor and Welfare survey; Ministry of Justice Survey; and Japan Bar Association Survey.
and vocational training. As Charles and Grusky also find, the service sector expansion and gender egalitarian norms appear to increase female occupational concentration. Unlike Charles and Grusky, however, this article also provides some data to suggest that labor-market institutions such as employment protection might affect the mechanism by which the service sector expands.

The findings presented in this article have implications that go beyond the study of sex segregation. These can be broadly summarized as follows. First, the article offers a new perspective on the varieties of capitalism. Although the scholarly debate on the varieties of capitalism has centered on the issue of the economic efficiency of different models of capitalism, this article has highlighted the highly gendered consequences of these models. CMES, it is argued here, are generally more gender biased than LMES. This gender bias does not disappear even in a Scandinavian subgroup of CMES that provide generous social policies for working mothers. A gendered perspective also illuminates similarities and differences across countries generally neglected by the VOC literature. The literature rarely pays attention to mixed cases (France, Italy, and Spain). In spite of the fact that these mixed cases share many of the institutional features found in CMES, most VOC studies exclude the mixed cases from their analyses. This article has shown that mixed cases produce results similar to CMES when they possess similar institutions such as strong employment protection. Furthermore, a gendered perspective highlights intracategory differences within the CMES and LMES that require further investigation. The figures presented in the article demonstrate, for instance, that Canada diverges from other LMES in terms of underrepresentation of women in the manufacturing and private sectors.

Second, greater awareness of the gendered consequences of labor-market institutions and social policies also benefits the genre of comparative political economy more generally. In recent years, mainstream, nonfeminist scholars have slowly become aware of the importance of gender issues. Scholars have increasingly noticed highly gendered con-

35 Maria Charles disagrees with the idea that CMES are more segregating, arguing that factors such as postindustrialism matter more. This may be true when we focus on female concentration in service (that is, postindustrial) sectors of the economy, since variables such as service sector size, gender norms, and female labor-force participation rates—and not factors such as employment protection and vocational training—correlate with female occupational concentration. This article, instead of merely comparing CMES and LMES, has focused more on the effects of specific institutional characteristics and extended the analysis to a group of countries usually treated as “mixed cases” in the VOC literature. Maria Charles, “National Skill Regimes, Post-industrialism, and Sex Segregation,” *Social Politics* 12 (August 2005).
sequences of different labor-market arrangements. With the falling fertility rates in many advanced industrial societies, the issue of women’s work has become one of the most pressing questions of the day. Nonetheless, political scientists have generally restricted their attention to female labor-force participation rates. This article has shown that policies for working mothers are not the only solution to broadening women’s choices. Other institutions—seemingly unrelated to gender issues—such as types of vocational training methods and the degree of employment protection also influence the choices available to women.

Finally, the findings in this article offer a new perspective on gender equality. One implication is that a reduction in employment protection is likely to reduce sex segregation. Indeed, a separate study on historical changes within the same countries supports this view. Where does this observation lead us? Does this imply that employment protection ought to be reduced as a means of securing gender equality? The problem here is that any reduction in employment protection will expose families to greater fluctuations in their lifestyles and household incomes depending on the generosity of unemployment benefits. This risk is greater for single-earner families than for dual-earner families. Is it possible to reduce employment protection in the name of gender equality and let families cope with greater economic fluctuations by having two earners instead of one? Needless to say, occupational sex segregation constitutes just one aspect of gender inequality. It nonetheless raises new normative questions over what types and degrees of gender equalities we should strive for as policy objectives and what trade-offs there might be with other goals that our society adheres to. In sum, a study of sex segregation opens up fertile ground for both empirical and normative inquiries by political scientists.


China -- Economic conditions -- 2000-

Abstract:
Under certain circumstances, the etiology of endogenous institutional change lies in the informal coping strategies devised by local actors to evade the restrictions of formal institutions. With repetition and diffusion, these informal coping strategies may take on an institutional reality of their own. The author calls the resulting norms and practices *adaptive* informal institutions because they represent creative responses to formal institutional environments that actors find too constraining. Adaptive informal institutions may then motivate elites to reform the original formal institutions. This contention is illustrated by three major institutional changes that have occurred in the course of China’s private sector development since the late 1970s—the legalization of private enterprise, the admission of capitalists into the Chinese Communist Party, and the amendment of the state constitution to promote the private economy.

Estévez-Abe, Margarita.

- *Gendering the Varieties of Capitalism: A Study of Occupational Segregation by Sex in Advanced Industrial Societies*
[Access article in HTML] [Access article in PDF]

Subject Headings:
- Sex discrimination in employment -- Developed countries.
- Women’s rights -- Developed countries.

Abstract:
This article explores the unintended gendered consequences of employment protection and vocational training systems. It develops a micrologic of skill investment by workers and employers to identify the mechanism by which specific skills become disadvantageous for women. The central claim of the article is that institutions that encourage male investment in specific skills exacerbate occupational sex segregation. The article finds that coordinated market economies, because of their robust institutional protection of male skill investments, are generally more sex segregating than are liberal market economies. The empirical section provides cross-sectional analyses of advanced industrial countries.

- The Contributors
[Access article in HTML] [Access article in PDF]
THE CONTRIBUTORS

KRISTIN M. BAKKE is a Ph.D. candidate in the Department of Political Science at the University of Washington. In 2007–8, she will be a postdoctoral fellow at Harvard University's Belfer Center for Science and International Affairs. Her dissertation examines federal states' diverse capacity to contain intrastate struggles, looking closely at the separatist struggles in Chechnya, Punjab, and Quebec. She can be reached at kmbakke@u.washington.edu.

ERIK WIBBELS is an associate professor of political science at the University of Washington. He is the author of Federalism and the Market (2005). He is currently working on two projects, one aimed at explaining the emergence of diverse social spending regimes in the developing world and the other examining the resource curse literature in light of unusual empirical settings. He can be reached at ewibbels@u.washington.edu.

SHIGEO HIRANO is an assistant professor of political science at Columbia University. He has published journal articles and book chapters on elections and representation and is currently working on several projects related to intraparty competition and to the distribution of public expenditures. He can be reached at sh145@columbia.edu.

KEITH DARDEN is an assistant professor of political science at Yale University. He is the author of Economic Liberalism and the Formation of International Institutions among the Post-Soviet States (2007). He can be reached at keith.darden@yale.edu.

ANNA GRZYMALA-BUSSE is an associate professor of political science at the University of Michigan. She is the author of Redeeming the Communist Past (2002) and Rebuilding Leviathan (2007). Her current research projects focus on political competition and the impact of religion on public policy. She can be reached at abusse@umich.edu.


MARGARITA ESTÉVEZ-ABE is an associate professor of political economy in the department of government at Harvard University. She is the author Welfare and Capitalism in Postwar Japan (forthcoming) and is currently working on a book titled, “Gendering the Varieties of Capitalism.” She can be reached at mestevez@wcfia.harvard.edu.