

*Labor Markets, Public Policies and Gender Equality: The Varieties of Capitalism Perspective and Beyond<sup>i</sup>*

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**Abstract:** This paper explores the unintended gendered consequences of varieties of capitalism. It develops a novel micro-logic of gender bias of different skills to explain occupational sex segregation. The central claim of this paper is that specific skills discriminate against women; while general skills are more gender neutral. Coordinated market economies, because of their robust institutional protection of male skill investments, end up exacerbating sex segregation in the market. The empirical section of the paper consists of cross-sectional analyses of 20 advanced industrial countries.

## INTRODUCTION: SEX SEGREGATION AND UNSOLVED PUZZLES

Occupational sex segregation still persists in most advanced industrial countries: women are less likely to hold positions of responsibility; and they tend to be segregated into “female” occupations. Sex segregation is a problem because it stalls economic equality between the two sexes: sex segregation accounts for the large bulk of the gender wage gap that currently exists.<sup>ii</sup> A closer look at the cross-national patterns of sex segregation poses a series of important empirical as well as normative questions.

Notwithstanding universal tendencies of sex segregation, a highly counter-intuitive—but well documented—cross-national pattern of sex segregation exists. Figure 1 plots countries in terms of female and male occupational concentrations as measured by Richard Anker (1998). Figure 1 shows the relatively high levels of occupational segregation in Scandinavian countries compared to Anglo-American countries, which are notorious for their lack of policy support for working mothers. Scandinavian countries, otherwise known for their success in achieving gender equality, actually show high levels of occupational sex segregation.<sup>iii</sup> This is surprising precisely because no other countries in the world are as committed to the advancement of gender equality as Scandinavian countries. Why do Scandinavian countries do worse than others in integrating the two sexes in the labor market? And, by the same token, why do countries less supportive of working women—the Anglo-American countries—have less sex-segregated labor markets?

[Figure 1 around here]

Experts of sex segregation have long puzzled over the counter-intuitive patterns of occupational segregation among advanced industrial societies.<sup>iv</sup> Advocates of the

social democratic model might justify the high degree of sex segregation in Scandinavia on the grounds that Scandinavian men and women are *different but equal*, because their compressed wage structure produces the narrowest gender wage gap among advanced industrial countries despite their highly sex segregated labor force. Are women really *equal* when men occupy positions of authority in the economic realm? Or are women fundamentally different from men in what they pursue in life that gender equality necessarily means sex segregation as a result of free will? Or do institutional factors constrain their choices? The fact that advanced industrial societies display different patterns of sex segregation provides a fertile ground to empirically explore these important normative questions.

This paper thus seeks to explain cross-national patterns of occupational sex segregation. While the paper has been inspired by the Scandinavian puzzle, it is concerned with cross-national variations of sex segregation among advanced industrial societies more broadly. To this end, it develops an institutional theory of occupational sex segregation that focuses on different national skill regimes. The central claim of the paper is a novel one: institutions that promote specific skill investments produce unintended gender biases. To put it differently, institutions associated with the so-called coordinated market economies (CMEs) are more sex-segregating than those associated with liberal market economies (LMEs). The paper provides a micro-level logic of skill investment to identify the mechanism of gender bias of specific skills and, by extension, institutions supportive of such investments. Our Scandinavian puzzle, this paper argues, can be attributed to the nature of labor market institutions in Scandinavia—Scandinavian

countries constitute a sub-group of CMEs. The paper also demonstrates the limits of women-friendly policies in reducing sex segregation.

This paper builds upon and contributes to the varieties of capitalism literature (hereafter as VOC). The VOC literature has largely been “sex-blind.”<sup>v</sup> This paper contributes to the VOC debate by identifying the gendered consequences of the key institutions that sustain distinctive models of capitalism. It draws upon the assumptions of the VOC to show: (a) that these assumptions presuppose a gendered “male” perspective; and (b) how these assumptions are likely to have different implications for women than for men. Like feminist scholars have identified previously neglected gendered consequences of welfare states by their effort to *gender* the welfare state, this paper *genders* the varieties of capitalism.<sup>vi</sup> *Gendering* of the VOC perspective provides an institutional explanation that enriches our understanding of sex segregation. A *gendered* perspective on the varieties of capitalism generates a new research agenda that is useful for the disciplines of comparative political economy and women’s studies.

The empirical section of the paper consists of a cross-section analysis of 20 advanced industrial countries that uses tabulations and OLS regression analysis. East European countries have not been included in the study, because their socialist past has created a different gender dynamics. Pooled timed series analysis has not been used in order to increase the sample size because of two reasons. One, since the aim here is to explain cross-national differences that emerge out of institutional structures that are relatively stable over time, a strategy to use cross-section data from one time period to explain multiple dimensions of sex segregation is more appropriate. Two, problems of data availability would have made it very difficult to collect necessary data for all

countries resulting in a pooled time series data for a handful of countries limiting variations on the key independent variables. Data on gender breakdown of occupational categories are hard to come by—as frequently lamented by experts of occupational sex segregation. In addition, multiple year data on the institutional variables used in this study (OECD employment protection legislation index, generosity of family leaves) are only available for circa 1990 and a more recent year, making a pooled time series analysis virtually impossible. In order to address the issue of change across time, I have elsewhere conducted a comparative study by means of carefully matched case studies. This paper, however, is primarily concerned with cross-national variations at a particular point in time.

The rest of this paper is organized in four sections. Section one reviews three families of relevant theories and discusses their insights and limitations. Section two presents an alternative theory of sex segregation—what I call the skill-based theory of occupational segregation. Section three provides empirical evidence in support of the skill-based theory. Section four, the concluding section, summarizes the findings of this paper and discusses normative implications.

## I. THEORIES OF SEX SEGREGATION: THEIR INSIGHTS AND LIMITATIONS

Before we can review the existing theories of sex segregation, it is necessary to clarify what sex segregation means. Despite the common use of *dissimilarity index* as a way of capturing degrees of sex segregation, the reality of sex segregation is a complicated multi-faceted phenomenon impossible to express in one single aggregated index such as *dissimilarity index*.<sup>vii</sup> *Dissimilarity index* simply measures the extent to

which men and women need to change their current jobs for them to be evenly distributed across occupational categories.<sup>viii</sup> By aggregating sex segregation into one single index, the information about multi-faceted nature of sex segregation gets lost. It is thus more useful to conceptualize sex segregation both as *vertical* segregation and *horizontal* segregation or concentration of men and women into single-sex-dominated occupations.<sup>ix</sup>

*Vertical* segregation refers to the under-representation of women in high status occupations such as managerial jobs and their over-representation in low-status occupations such as clerical jobs. *Horizontal* segregation, in turn, refers to the under-representation (or over-representation) of women in some sectors of the economy such as manufacturing and service sector. Advanced industrial countries demonstrate different combinations of *vertical* and *horizontal* segregation: some countries are lower (or higher) than others on both dimensions of sex segregation; while other countries are higher on one but not on the other dimension. Similarly, another way to conceptualize segregation is to think of it as concentration of workers of one sex into occupations dominated by the same sex as in Figure 1. It is possible that men's concentration into male-dominated occupations accounts for a larger portion of the overall segregation in some countries, yet women's concentration into female dominated occupations might be the leading cause of segregation in others. So what explains the multi-faceted sex segregation?

We can identify three families of relevant theories to explain occupational segregation by gender: (a) economic theories; and (b) sociological theories of cultural gender norms; and (c) institutional theories. Let me first briefly review them and then consider their limitations in accounting for the cross-national patterns of sex segregation—referring back to the Scandinavian puzzle when necessary.

## I. 1. ECONOMIC THEORIES: HUMAN CAPITAL, STATISTICAL DISCRIMINATION AND SKILL

### ATROPHY

Labor economists have developed three types of explanations for occupational segregation: human capital theory, statistical discrimination theory and skill atrophy. Human capital theory attributes gender segregation to lower levels of education and skills among women. Women invest little in education—and their families invest less in their daughters' education than their sons'—because women are expected to spend more time at home taking care of their family rather than at work.<sup>x</sup> Statistical discrimination theory, in contrast, focuses on (i.e. makes simplifying assumptions about) employers' behavior.<sup>xi</sup> Employers avoid hiring women, so it is assumed, because they are more likely than men to quit for family-related reasons (i.e. child rearing and the care of elderly parents, for instance). Employers make their hiring decisions on the basis of the higher statistical probability of women quitting. A variant of human capital theory—developed by Polachek (1981)—assumes that occupational segregation results because women, who expect to spend a lot of time outside the labor force, choose occupations that require skills with low “atrophy” rates.<sup>xii</sup> The human capital theory and statistical discrimination theory are better suited to explain the mechanism of *vertical* segregation than *horizontal* segregation, while the “atrophy” rate-based self-selection of women could, in theory, be applied to both forms of segregation.

Does human capital theory—or either the other two economic theories of segregation—explain cross-national variations among advanced industrial societies?

It is possible to draw concrete predictions for cross-national variations from the three variants of economic theories of sex segregation. First, human capital theory would predict that countries whose women under-invest in education relative to men are likely to produce greater levels of sex segregation. Second, statistical discrimination theory would predict that employers are likely to be more discriminatory against women in countries where women's labor market attachment is weaker. Third, the skill atrophy theory similarly would predict that countries, where women's labor market attachment is weaker, are likely to sort women into high atrophy and low atrophy skill jobs to a greater degree—hence higher degree of segregation.

All these theories hence would predict that Scandinavian countries should report the lowest levels of segregation—both *vertical* and *horizontal*. When we compare women's human capital in advanced industrial societies, Scandinavian women do very well. Scandinavian women have surpassed men in terms of their investment in tertiary education; and they compare very favorably to women in other countries in terms of their educational attainment (see Figure 2).<sup>xiii</sup> As far as human capital is concerned, therefore, Scandinavian women should look more like men in terms of their occupational distribution. But the reality is just the opposite. Scandinavian countries have highly sex-segregated workforce.

[Figure 2 around here]

Scandinavian women also possess the strongest labor market attachment among advanced industrial societies thanks to well-developed public policies for working mothers. According to OECD (2002), the gender employment gap between mothers and fathers is narrowest in Scandinavian countries by a significant margin.<sup>xiv</sup> More than 80%

of mothers work in Scandinavia. Austria, France, UK and the US compose the next group of countries with mothers' employment rates ranging between 73%~76%. The rest of the countries fall some where between 50% to 70%. In other words, Scandinavian women stay in the workforce through their pregnancy and child-rearing years. Moreover, the gender gap in enterprise tenure is smaller in Scandinavian countries when compared to others (see Figure 3). Although both the statistical discrimination and atrophy theories would predict Scandinavian countries to have the lowest levels of sex segregation, as we have seen already, such is not the case.

[Figure 3 around here]

## I.2. SOCIOLOGICAL THEORIES: CULTURAL NORMS OF GENDER ROLES

Cultural theories—favored by sociologists and some feminist economists—reject the aforementioned economic theories. Feminist economists critique mainstream male economists for taking the gendered division of labor for granted.<sup>xv</sup> Sociologists challenge the assumption of economic rationality as the basis of sex discrimination. Instead, they emphasize the role of *non-rational* factors such as employers' tastes and “cultural norms.” They recognize various discriminatory practices that arise from company-level personnel management practices and cultural norms about “appropriate” gender roles.<sup>xvi</sup> Other sociologists have looked into the process of socialization that affects women's career choices.<sup>xvii</sup> Nuanced cultural explanations should be able to account for both *vertical* and *horizontal* sex segregation. *Horizontal* segregation occurs when certain jobs are stereotyped as being either “feminine” or “masculine.” Cultural theorists associate female qualities such as inter-personal skills with service sector jobs

and associate masculine qualities with manufacturing jobs. *Vertical* segregation, in turn, occurs because of cultural norms defining authority as a masculine quality.

The sociological theories hence indicate that cross-national patterns of sex segregation might be rooted in cross-national differences in cultural norms about gender roles. In other words, we should expect to see greater (or lower) levels of sex segregation in countries whose population hold more (or less) traditional views of gender roles.<sup>xviii</sup>

Figure 4 compares attitudes towards men's role as the breadwinner as a way of measuring the normative view on the traditional gender roles. Scandinavian countries can be found at the least traditional end—i.e. the most gender egalitarian end. Yet it remains puzzling why such a gender-equality committed people work in one of the most sex-segregated labor markets. If cultural theories were correct, countries such as Japan, where citizens believe in traditional gender roles, should show more skewed sex distribution across occupations. Yet, on some measures of sex segregation, a highly traditional Japan looks better than Scandinavia! (Figure 1 shows that Scandinavian countries possess greater levels of female and male occupational concentration than Japan.)

[Figure 4 around here]

### I.3. INSTITUTIONAL THEORIES: THE ROLE OF PUBLIC POLICY TOWARD WOMEN

A third approach focuses on institutional contexts. In this camp, we find a number of scholars—some sociologists and political scientists—who pay attention to policies designed to promote and protect women. Examples of these policies include equal opportunity legislation, policies to promote mothers' employment, and restrictive protection of motherhood—such as the prohibition on women's night shifts.<sup>xix</sup> These institutional factors again might influence both *vertical* and *horizontal* segregation. As

Mariko Chang points out, equal opportunity law is expected to lead more women into traditionally male “high status” occupations reducing *vertical* segregation, while the presence of prohibition on women’s night shifts is expected to keep women out of jobs that require night shifts such as manufacturing increasing horizontal segregation.<sup>xx</sup>

Institutions such as anti-discrimination legislation and women-specific restrictive labor regulation can potentially account for cross-national differences. Countries with stricter anti-discrimination laws should have more integrated labor markets than those without. Countries that do not impose restrictions on various aspects of women’s work are likely to have more sex-integrated labor markets than those that impose such restrictions. According to Chang’s index, Scandinavian countries score very similarly with countries such as Canada and the US.<sup>xxi</sup> They enforce equal employment law; but do not impose restrictive protection of women. However, Scandinavian countries possess labor markets that are much more sex-segregated. Equal employment opportunity legislation and restrictive labor standards to protect motherhood thus do not account for the Scandinavian puzzle posed earlier *per se*.

A number of scholars have looked at other types of women-specific policies such as public childcare provision to explain sex segregation. These scholars pay attention to 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. They argue that women-friendly welfare states end up causing greater concentration of women into the public sector by creating lots of care jobs.<sup>xxii</sup> Since the Scandinavian countries are amongst the most generous welfare states when it comes to public childcare provision, this institutional explanation appears highly plausible.

Nonetheless, while remaining a highly plausible explanation for female concentration, the public sector thesis does not explain why Scandinavian countries possess high levels of *vertical* segregation. For instance, as it will be shown later in this paper, the percentage of female managers in Scandinavia is relatively small. It is not entirely clear why widely available childcare should not help women advance into higher job categories. The Scandinavian puzzle hence remains unsolved.

This paper, while advocating an institutional analysis, goes beyond the prevailing focus on women-specific policies and institutions to account for the cross-national variations in sex segregation. In fact, some scholars provide great insights in this regard. Maria Charles et al., and Jill Rubery and Collete Fagan suggest that the presence of vocational education might exacerbate sex segregation.<sup>xxiii</sup> Charles et.al. (2001) compare Switzerland and the US to show how vocational training for young people in Switzerland exacerbates sex-stereotyped career choices. Rubery and Fagan observe that a number of European countries with strong emphasis on vocational education appear to be more sex-segregating. Existing studies, however, do not identify which type of occupational segregation vocational training is responsible for. As mentioned earlier, occupational segregation is a complex phenomenon consisting of different types of segregation. Having said that studies that focus on non-women specific institutions provide a useful point of departure for further exploration.

To summarize, each of these theories provides important insights into potential causes of sex segregation, but none offers a systematic explanation as to what shapes cross-national variations in *vertical* and *horizontal* segregation. This paper offers an alternative institutional account of sex segregation. In contrast to the afore-mentioned

institutional theories, my approach emphasizes gendered effects of labor market institutions instead of women-specific policies and institutions. I identify the gender-bias of, what I call, “specific skill regimes” as opposed to “general skill regimes” as the most fruitful way of analyzing the gender-bias embedded in different types of capitalist countries.

## II. THE ARGUMENT: SKILLS, PUBLIC POLICY AND GENDER BIAS

This section lays out the logic of gender bias in skill regimes and discusses why women-friendly policies may fail to counteract such a gender bias. Before we can discuss gender bias in skill regimes, it is necessary to introduce crucial qualitative differences between different types of skills.

### II.1. DIFFERENT SKILLS AND SKILL REGIMES

Although political scientists generally speak of a skilled/unskilled dichotomy, differences between skills are more complex. Skills vary in terms of the portability across employers, the locus of training, and the type of training. To begin, we can broadly distinguish firm-specific, trade- or industry-specific and general skills. Firm-specific skills are acquired through on-the-job training (OJT) and are only valued by current employer. These specific skills thus lack portability; and hence make very risky investments for workers. For this reason, workers will be averse to investment in firm-specific skills. Industry-specific and trade-specific skills enjoy greater portability, especially when authoritatively certified. Acquisition of these skills can either involve employers directly (apprenticeships) or not (school-based vocational education). General skills, in contrast, are more portable, because they are useful for a large number of

employers. Like industry-specific skills, general skills are particularly portable when they are certified in an objectively recognizable form such as school diplomas.

Different degrees of portability translates into different “investment risks.” Since firm-specific skills are most vulnerable to job termination, workers will hesitate to invest in these skills when there is job uncertainty. Similarly, industry-specific skills are vulnerable to demand fluctuations in product markets that require those skills. Therefore, for workers to invest in specific skills, their investment risks need to be reduced.

Institutionalized forms of strong employment protection, for this reason, make greater investments in specific skills possible by changing incentive structure. Similarly, when employers are uncertain whether they can hold onto their workers due to market volatility, they will hesitate to invest in their workers’ human capital. Institutions that enable employers to retain their workers during economic downturns also increase specific skill investments. Generous levels of unemployment benefits, for instance, make it relatively safe for workers to invest in the craft skills.<sup>xxiv</sup> These benefits will also enable employers to perch their redundant skilled workers when the demand goes down and to rehire them later.

The distinction between coordinated market economies (CMEs) and liberal market economies (LMEs) is pertinent here. As the VOC literature states, CMEs are rich in institutions that make long-term mutual commitments between employers and workers credible. CMEs—Austria, Belgium, Denmark, Finland, Germany, Japan, Luxembourg, the Netherlands, Norway, Switzerland and Sweden—generally possess much stronger employment protection legislation and more generous unemployment benefits, which make specific skill investments more viable.<sup>xxv</sup> This implies that CMEs are better able to

sustain specific skill regimes—one of the central claims of the VOC literature (see Estévez-Abe, Iversen and Soskice 2001). In contrast, LMEs—Australia, Canada, New Zealand, UK and the US—precisely lack those institutions that are rich in CMEs. As a result, workers and employers are less capable of investing in specific skills when compared to CMEs.

As it should become clear in the following sections, the kernel of my skill-based theory is that specific skills—as opposed to general skills—are more biased against women, because of their limited portability. It follows from this that those national institutions that promote investments in gender-biased specific skills exacerbate sex segregation. To put it succinctly, CMEs are more likely to be sex-segregating than LMEs.

## II.2. GENDER BIAS OF SKILLS

Women are different from men, because they are more likely than men to interrupt their work life in order to tend to their family's needs. For this reason, the types of skills they acquire and how they acquire them have different implications for women than for men. Firm-specific skills are biased against women the most. The limited portability of firm-specific skills makes such skills unattractive for women who plan to interrupt their career to raise a family. A woman's potentially short tenure at the same firm reduces the return on her skill investments every time she exits and re-enters the labor force. Moreover, the critical skill acquisition period often coincides with a woman's child-bearing years. Work discontinuity early in one's career can jeopardize the process of firm-specific skill acquisition.

Even when individual women are determined to put their careers first, they still face problems because of employers' fear that women are more likely than men to quit. Since employers have to pay for the cost of recruiting and training of new workers, they are sensitive to their turnover rate. As the labor economic theory of statistical discrimination suggests, this can occur independently of whether a particular female job applicant plans to have a family or not. When employers value firm-specific skills, they have greater incentives to discriminate against women when hiring in order to minimize the loss of their search and training costs. Firm-specific skills thus exacerbate the gravity of statistical discrimination.<sup>xxvi</sup> Such discrimination both denies women their chance to acquire firm-specific skills and creates a gender gap in human capital, which together combine to yield occupational segregation.<sup>xxvii</sup>

General skills, in contrast, are more gender-neutral. Because general skills are portable, employees—not employers—are likely to make the investments on their own.<sup>xxviii</sup> General skills that come with authoritative certification are most suited to women's needs. Such skills require that women enroll in school programs or take certification exams. Most certified general education—including high school diploma, BA and MBA—fall into this category. Women can pursue such qualifications independently of employers' calculations. When job qualifications are based on general skills acquired at school rather than firm-specific skills accumulated through on-the-job training, women will have a better chance in moving up the occupational hierarchy.<sup>xxix</sup>

Let me consider gendered consequences of two kinds of vocational training—school-based vocational training and apprenticeships. Many countries offer vocational training at high schools and beyond. In these countries, typically, students who proceed

to vocational tracks go into the labor market upon completing their vocational education, while students in general education track have a choice to continue onto higher education if they pass the qualifying examinations (e.g. the British A-levels, the French baccalaureate, and the German Abitur). Some countries rely on apprenticeships as part of the formal vocational training. Apprenticeships are likely to be more gender-segregating than school-based training, because 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). Because of greater employer involvement, apprentices—even when they train people in certifiable skills—exacerbates statistical discrimination. Employers are likely to avoid taking in female apprentices for skilled jobs from the fear that they may drop out due to family reasons. Employer-provided apprenticeships are thus likely to be more gender discriminating than school-based vocational training.

In sum, women are more likely to invest in general skills partly because of low portability of specific skills, which are less desirable for people who expect work interruptions, and also because of difficulties women encounter in accumulating specific skills due to statistical discrimination by employers. As a consequence, we should expect to find *fewer* women in occupations that require specific skills—i.e. firm-specific skills and other craft-type vocational skills—and, likewise, *more* women in occupations that require general skills.<sup>xxx</sup>

### II.3. GENDER BIAS OF WELFARE STATES: EMPLOYMENT PROTECTION

Welfare states enter the story here, because they affect the decisions of workers and employers about the skills in which to invest (Estévez-Abe et. al. 2001). As already

mentioned, general and specific skills carry different degrees of “investment risk” by virtue of variations in their portability from one employer to another. For both men and women, firm-specific skills are the riskiest. The limited portability of firm-specific skills makes workers extremely vulnerable to potential employment termination, which results in a drastic depreciation of their labor in the external labor market. General skills, on the other hand, minimize the damage from employment termination because separation from the current employer does not lead to any depreciation in the value of general skills. Social protection such as strong employment protection legislation, for instance, can systematically reduce the risk exposure of workers with firm-specific skills. When a third party—the government in this case—enforces such protection, it sends a strong signal to workers that their investments in specific skills will be safeguarded. As mentioned earlier, CMEs offer this kind of protection.

Welfare states can, therefore, shape national skill profiles by making it safer for workers to make specific skill investments<sup>xxxii</sup>. However, employment protection from layoffs, for instance, is insufficient to safeguard women’s investments in specific skills. Women face three types of uncertainties that men do not in making career decisions. These are: (i) risk of dismissal due to pregnancy and other family-related contingencies; (ii) risk of income loss during work interruptions (i.e. child rearing); and (iii) risks of skill depreciation and missed opportunities for skill formation during these work interruptions. In other words, employment protection *per se* fails to safeguard women’s investments in specific skills; while the same is not true for men.

Institutionalization of safeguards against women-specific risks is thus necessary in order to level the playing field for women. In the absence of such safeguards,

employment protective legislation is likely to widen the gender gap in specific investments resulting in greater occupational segregation than would otherwise result. The most important *women-friendly* policies include generous paid maternity and parental leaves, and extensive public childcare provision. Statutory maternity leave serves as extra employment protection targeted at women to protect them from dismissal risks. It works in this way by prohibiting employers from dismissing pregnant workers. In their strongest forms, statutory maternity and parental leaves guarantee a mother's return to the job she held before childbirth. Paid—as opposed to unpaid—maternity and parental leaves protect women against loss of income during pregnancy and childrearing. Extensive availability of public childcare similarly protects women from loss of income due to childrearing by enabling mothers to return to work. Childcare, however, also protects women from risks of skill depreciation and missed skill acquisition opportunities in ways that even the most generous of paid leaves cannot hope to match. Let me elaborate on the differences between generous paid leaves and childcare.

#### II.4. GENDER BIAS OF WELFARE STATES: LIMITS OF WOMEN-FRIENDLY POLICIES

The two types of women-friendly policies discussed so far are likely to interact with skill regimes in different ways. Statutory leaves and public childcare provision are both intended to promote women's employment. They nonetheless differ on a dimension that is critical for women's human capital development: paid leaves increase women's time off work, while extensive childcare provision reduces it. This means that paid leaves potentially widen the female-male gaps in the number of years worked—unless the government mandates paternity leaves on fathers forcing men to take time-off-work—

while childcare provision narrows the gap.<sup>xxxii</sup> In other words, a long generous paid leave *per se* does not help women's skill acquisition of firm-specific skills. On the contrary, time-off-work during the early years of a woman's career interrupts and delays her skill acquisition. Extensive provision of childcare thus is indispensable for women's firm-specific skill investments, because it enables the continuous work necessary for firm-specific skill acquisition. Employers can also use voluntary time-off as a signal of workers' commitment to work. Employers are likely to consider women who take long leaves as uncommitted to their work. The potential signaling effect of long leaves thus can affect all employers regardless of skill regimes.

Furthermore, long generous paid maternity and parental leaves also incur additional costs to employers in ways that public provision of childcare does not. When leaves are long, employers face two options: (i) to hire replacement workers; or (ii) to allocate the work to existing employees. In addition to regular hiring and training costs for replacement workers, employers in specific skill regimes encounter additional burdens and problems. In skill regimes that emphasize specific skills, option (i) is difficult. Recall that specific-skill regimes come with very strong employment protection, precisely to enable such skill investments. Strong employment protection legislation typically includes restrictions on the temporary employment contracts necessary for hiring replacement workers. Therefore, option (ii) is often the only available solution to employers in specific skill regimes. This option, however, is not free of problems: the longer the leave, the more difficult is the post-leave re-integration into the workforce for two reasons. One, by the time a worker comes back from her leave, other regular workers will have already filled in for her job. Two, in occupations

where the pace of technological change is rapid, the cost of retraining can be significant. In these cases, cost-conscious private sector employers are likely to be more averse to hiring women in the first place. Long paid leaves can affect employers in general skill countries in the same way, although less acutely so, because hiring replacement workers is easier.<sup>xxxiii</sup> Long paid leaves thus are likely to depress demand for female labor in private sector in CMEs that rely on specific skills.

Public sector employers, however, do not necessarily react in the same way as private sector employers do, because they face a very different set of constraints—both political and financial. A government may uphold gender parity as a policy objective and decide to pay for the additional costs to hire, train and re-train women. When such a political will is present, even when public sector employers require firm-specific skills, women will be spared of the same discrimination they face in the private sector. Although public sector employment can compensate for the sluggish demand for female labor in private sector in CMEs, however, this should come with a price: a bifurcation of male-dominated private sector and female-dominated public sector.

## II.5. HYPOTHESES

This section has presented the micro-logic by which skill regimes might perpetuate sex segregation in the workforce. We can draw specific hypotheses about different dimensions of occupational sex segregation from the preceding discussion of skill regimes:

*H1 (Educational Enrollment Pattern):* Women are likely to be under-represented in vocational training programs in general, because they generally prefer general skill investments when compared to men.

*H2 (Sex Bias of Apprenticeship):* Even when women invest in vocational training, because of statistical discrimination by employers, women are likely to be under-represented in apprenticeship programs both compared to men and compared to female enrollment in school-based vocational training.

*H3 (Horizontal Segregation 1):* The gender gap in vocational skills should matter most in countries that emphasize vocational education as a requisite for job entry. The more a country relies on vocational training, the more under-represented women will be vocational skill-intensive sectors of the economy creating “male-dominant” occupations. Because CMEs offer institutional safeguard against investments in vocational skills by men such as employment protection, they are expected to be more sex-segregating than LMEs.

*H4 (Horizontal Segregation 2):* This is a corollary of *H3*. Because gender gap in vocational skills produce more segregating effect in countries that emphasize vocational training, those countries are likely to reduce women’s employment opportunities. Because CMEs offer institutional safeguard against investments in vocational skills by men such as employment protection, they are expected to be more sex-segregating than LMEs.

*H5 (Horizontal Segregation 3):* CMEs can only offset the suppressed demand for female labor by creating public sector jobs for women. As a result the rise in female employment is likely to result in greater degree of female concentration into “female-dominated” jobs.

*H6 (Vertical Segregation):* Countries that institutionally support employment security to sustain internal labor markets create a gender gap in firm-specific skill acquisition leading to the under-representation of women in high status jobs in enterprises. CMEs provide better support for employment security, and hence are more likely to have fewer female managers.

### III. EMPIRICAL EVIDENCE: EXPLAINING OCCUPATIONAL SEGREGATION

This section examines the validity of the six hypotheses presented at the end of the previous section. For reasons mentioned in the introduction, this paper carries out a cross-section analysis of 20 advanced industrial countries by means of tabulations and

OLS regressions. Countries under study include: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, UK and US. Of these 20 countries, 5 are considered as unambiguous cases of LMEs—Australia, Canada, New Zealand, UK and US—and eleven as unambiguous cases of CMEs—Austria, Belgium, Denmark, Finland, Germany, Japan, Luxembourg, Netherlands, Norway, Sweden and Switzerland.<sup>xxxiv</sup> The VOC literature considers France, Ireland, Italy and Spain as mixed cases. I have included these mixed cases here because some of them share institutional characteristics of the CMEs. The same gendered consequences one expects in CMEs should be present in such mixed cases.<sup>xxxv</sup>

Otherwise noted, the data used in this section are all figures from the early 1990s. The early 1990s have been selected as the base year, because this is the earliest year for which the data for a relatively number of advanced industrial societies were available. I use the early 1990s as the benchmark to explain changes across time in my other work. To emphasize, the main task at hand here is to explain cross-national variations observed at the beginning of the paper.

All of the labor market and vocational training variables in this study come from the following data sources: OECD Employment Outlook (multiple years); OECD on-line database; Luxembourg Income Study; International Social Survey Program Work and Family Orientation 1997; and the data published in Richard Anker (1998). The attitudinal variables are drawn from the World Values Survey. Information to construct variables for the generosity of maternity and family leaves comes from Helene Gauthier (2000), Helene Gauthier and Ann Bortnik (2001), Sheila Kamerman (2002) and OECD

Employment Outlook 2002. More details about the data sources and construction of the variables are provided at the bottom of relevant tables and figures.

Despite the best effort to increase the sample size, the sample varies from 14 to 18 countries depending on the availability of the variables for the specific hypothesis under examination. For instance, because attitudinal variable is only available for 14 countries, every time I include the attitudinal variable as a control, the sample goes down to 14 countries. Similarly, some of the institutional variables and occupational gender breakdown are not available for all 20 countries.<sup>xxxvi</sup> Details about why some countries are missing from specific figures and tables are provided at the bottom of each table and figure.

### ***H1: Educational Enrollment Pattern***

Table 1 compares the relative importance of vocational education in 20 advanced industrial countries and the gender gap in investment in vocational education for a subgroup of countries, for which the data are available. The second and the third columns specifically compares gender gap in overall vocational training and in apprenticeship training, respectively. Hypothesis H1—women are less likely to invest in specific vocational skills—appears to hold. The second column shows that, in 12 out of the 14 countries for which comparable data are available, women lag behind men in their investment in specific skills to a greater degree.<sup>xxxvii</sup> For instance, nearly 13% more men engage in vocational training than women. Only in two countries, Ireland and the US, the share of women who have invested in vocational education has surpassed men's share. Yet as it can be read off from the column 1, these two countries happen to be the ones

where specific vocational degree and training are least important in the labor market as so few people pursue them.

Even when women invest in vocational education, they appear to invest in “more general” vocational training. UNESCO provides gender breakdown by field of vocational training for Japan, Austria, Denmark, Finland, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden and Switzerland. The median percentages of female enrollment in vocational education program for home economics and “crafts, industry and engineering” were 90% and 13% respectively. Only in Ireland (again an outlier), women outnumber men in “craft, industry and engineering” program. The UNESCO data indicate that even when women hold a vocational degree, its skill content often is more of a general kind in the sense that it lacks a close link to a very specific occupation (such as home economics).

We can therefore consider that the *HI (Educational Enrollment by Sex)* holds: women are much more likely to invest in general skills and less likely to invest in specific skills.

[Table 1 around here]

## ***H2: Sex Bias of Apprenticeships***

Let me now turn to apprenticeships. In order to examine whether women indeed face greater difficulty getting into apprenticeship programs due to employer discrimination, this paper compares percentages of men and women who have completed apprenticeship programs. Although apprenticeships exist in many countries, they are more formalized in some countries than others. For this reason, the official statistics are

only available for a small number of countries. The Luxembourg Income Study provides data on apprenticeships for Australia, Austria, Denmark, Germany, Ireland, Luxembourg and Switzerland (see the third column in Table 1).

This time, women lag behind men in all six countries. Australia, Austria and Denmark showing particularly large gender gaps. Detailed country reports further confirm the gender biased nature of apprenticeships. Country reports compiled by OECD and CEDEFOP identify Australia, Austria, Germany and Switzerland as countries with formalized apprenticeship programs. In all these countries, women are under-represented in apprenticeship programs; and most programs are either predominantly male or female.<sup>xxxviii</sup> It is important to note that apprenticeship still exists in a LME like Australia. At the same time, it should be recognized that its overall effect is likely to be much smaller because of the relatively smaller impact of vocational training for the population as a whole.

### ***H3: Horizontal Segregation 1—Male-Dominated Occupations***

*Hypothesis 3* predicts that the percentage of women in a skill-intensive sector of the economy is likely to be smaller the more a country emphasizes vocational education. Experts of occupational segregation have been aware of horizontal segregation, whereby men concentrate in manufacturing jobs and women in service jobs. Cultural theorists of sex segregation attributed this sex-based sorting to gender norms that prevail. In other words, some jobs are considered more male while others more female. This paper offers a different explanation represented in the third and fourth hypotheses (*H3* and *H4*). The claim here is that under-investment of women in specific vocational skills is likely to

produce skewed sex distribution across sectors. Sex-segregating effect should be strongest in countries that emphasize vocational training, because educational background and job entry is more tightly coupled in those countries (i.e. CMEs).

This paper uses manufacturing for durables as a prototypical male-dominated occupation. Some experts of occupational segregation measure male occupational concentration in terms of the percentage of men employed in male-dominated occupations (where men constitute more than 75% of the workforce). Such a measurement, however, confounds vertical and horizontal segregation by aggregate men working in high status male-dominated jobs and blue-collar male-dominated jobs (such as Richard Anker's measurement used in Figure 1). In order to more specifically examine *horizontal* segregation, this paper has selected manufacturing sector. Since it is a blue-collar occupation, it provides a good example to explore *horizontal* rather than *vertical segregation*. Narrowly focusing on a subset of manufacturing industries for durables also permit us to escape the problem of comparing apples and oranges that might result from comparing overall manufacturing sector. For instance, the relative size of the light industry can affect the gender ratio of manufacturing, because light industry (i.e. textile) tends to be more feminized. (Durables sectors are generally considered to be more skill-intensive and male-dominated jobs with stronger union organization. Even in this male-dominated sector of the economy, the share of women varies greatly from country to country from 13% in Belgium to 38% in Ireland.)

Table 2 presents the results of OLS regressions to examine the significance of the relative importance of vocational training in influencing the share of women in manufacturing of durables against competing hypotheses. As controls, I have included

variables drawn from alternative explanations reviewed in section two: cultural norms and women-specific social policies. Cultural theories attribute *horizontal* segregation to cultural beliefs about traditional gender roles: so the more traditional the population is, the fewer women in manufacturing because manufacturing is considered more “masculine” jobs. Women-specific policies are likely to boost female participation rate, which in turn, might positively increase the number of women working in manufacturing. Hypothesis 3 in this paper, in contrast, would predict that when vocational training is important, women’s under-investment in specific skills leads to an under-representation of women in high skill blue-collar sectors—regardless of cultural norms and female labor force participation rates.

[Table 2 around here]

The importance of vocational training remains statistically significant, although the strictness of employment protection legislation does not yield significant result (Table 2). Although employment protection has not yielded a significant result, it may not necessarily mean that institutional protection of specific skill investment does not matter. Employment protection consists one of the key institutional arrangements to support specific skill regimes. The VOC literature also suggests institutions such as generous unemployment benefits, restrictions on mergers and acquisition support the specific skill regimes. As indicated in the VOC literature, all these institutions are more likely to exist in CMEs than in LMEs.<sup>xxxix</sup> At this point, it suffices to show that CMEs rank lowest in terms of female share of manufacturing employment (Figure 5).

[Figure 5 around here]

Figure 5 shows the relationship between the share of women in manufacturing of durables and the relative importance of vocational education in 16 countries for which the relevant variables were available (countries, for which gender breakdown could not be attained, were dropped). Figure 5 shows that CMEs (Belgium, Denmark, Finland, Germany, Luxembourg and Sweden) cluster in the more segregating bottom right in the graph—fewer women in manufacturing—while most LMEs (Australia, UK and US) are found at the other less segregating top left.

Given the fact that Scandinavian countries score high on gender egalitarianism score than some of the LMEs such as Australia and UK, if the cultural thesis were to be right, we should expect Scandinavian countries to be located at the top left of the graph. Yet this is not what we observe from Figure 5. Scandinavian social policies to boost female labor force participation have not resulted in increasing the number of women in manufacturing either. Although not directly tested, we discussed how strong maternity protection such as restrictions on women's night shifts may reduce female employment in certain sectors of the economy. However, again, Scandinavian countries, which possess similarly gender-neutral regulation as North American countries, display much lower shares of women in manufacturing in Figure 5.

In short, the hypothesis *H3* presented in this paper appears to be more plausible than the competing cultural and institutional explanations. Hypothesis could be interpreted as an institutionally-embedded variant of the human capital thesis. However, it differs from the human capital thesis in that it pays attention to institutional environment that might affect men and women differently.

#### ***H4: Horizontal Segregation 2—Suppressed Demand for Women in Private Sector***

This hypothesis is a corollary of the hypothesis *H3*. Just as countries that emphasize vocational skills have led to a greater degree of sex-segregation in manufacturing by not hiring women, the same mechanism is expected to suppress employment of women in private sector as a whole. The more employers require vocational skills and the more tightly the job entry linked to vocational education, the more disadvantaged is the women in finding a job. Strong employment protection would also protect male firm-specific and other specific skills to a greater degree than women's further suppressing women's share of private sector jobs.

In addition to the same controls used for the analysis of women's share in manufacturing, two more variables—the size of service sector and women's relative investment in higher education—have been added. Service sector size may matter, as many argue, service sector jobs are more likely to employ women.<sup>x1</sup> Women's relative human capital score is potentially relevant because private sector jobs may also require high levels of general skills. Table 3 summarizes the results. Because the sample is small (N=16), instead of including all of the variables, different combinations have been tested in ways that make sense conceptually. For instance, service sector size and overall female labor force participation might have the same effects, so have not been included in the same regressions. Table 3 indicates that only the strictness of employment protection consistently appears to be significant.

[Table 3 around here]

Figure 6 plots countries along employment protection (horizontal axis) and women's share of private sector employment (vertical axis). As predicted, CMEs cluster in the bottom right of the figure away from LMEs on the top left.

[Figure 6: Women's Share of Private Sector]

### ***H5: Horizontal Segregation 3—Public Sector and Female-Dominated Occupations***

Let me now turn to yet another dimension of *horizontal* sex segregation, namely, women's concentration into female-dominated occupations. So far, this paper has provided evidence that labor market institutions in CMEs produce bias in favor of men. Hypothesis *H 5*, thus, predicts that the impact of public sector size would have a greater effect in female occupational concentration in CMEs than in LMEs. Because men are mostly in private sector jobs in CMEs, an increase in female employment via public sector expansion results in a greater concentration of women in public sector jobs. The nature of horizontal segregation caused by the public sector should be the opposite of what vocational training did for manufacturing. Instead of squeezing women out of the labor market creating "male-dominated jobs," public sector jobs create to "female-dominated jobs."

[Table 4 and Figure 7 around here]

In the empirical analysis, I have adopted Richard Anker's measure of women's concentration into female-dominated occupation (defined as occupations where more than 75% of the workforce are female). Although a similar figure for men includes a range of heterogeneous occupations confounding *horizontal* and *vertical* segregation,

female-dominated occupations are fewer and more homogeneous. For this reason, a measure of female occupational concentration does better capture how women are segregated into a narrow range of jobs. As generally argued, a regression analysis of all countries shows that service sector and female labor force participation rates have positive impact on female concentration (Table 4). A similar analysis using public sector size in lieu of service sector size has not produced any significant result. However, the impact of public sector size on female concentration is significant when we limit the analysis to CMEs in the sample. Figure 7 plots CMEs along public sector size (horizontal axis) and the degree of female concentration (vertical axis). As expected, CMEs with large public sector score much higher on female occupational concentration. Figure 7 does not include all CMEs due to the limitation of Anker's data on occupational concentration.

#### ***H6: Vertical Segregation—Women's Share of Managerial Jobs***

This section examines whether strong employment protection leads to the underrepresentation of women in managerial jobs. The logic behind this expectation is that strong employment protection protects internal labor markets, which are biased against women. Internal labor markets value firm-specific skills in promotions. Because women face greater difficulty accumulating firm-specific capital—as explained in section two of this paper—institutions such as employment protection that protects internal labor markets end up benefiting men in moving up the corporate ladder. In other words, we should expect to see fewer female managers in countries with stronger employment

protection. For reasons discussed in this paper, generous women-friendly policies are not likely to counteract this tendency effectively.

Table 5 consistently shows a significant impact of employment protection—when controlling for service sector size, gender gap in human capital, cultural attitudes, generosity of leaves and female labor force participation rates. Figure 8 plots the countries. Again, as expected, CMEs cluster at one end—the bottom right—while LMEs cluster at the top left. (Switzerland is an outlier among CMEs in that it clusters with LMEs.)

#### IV. CONCLUSION AND IMPLICATIONS FOR FUTURE RESEARCH

This paper has presented a new theoretical perspective with a focus on national skill regimes to explain sex segregation in advanced industrial societies. It has shown that national skill regimes can explain cross-national variations in both *vertical* and *horizontal* segregation. To summarize, the paper has demonstrated that countries with institutions that facilitate specific skill investments are more likely to protect male skill investments creating gender gaps. These gender gaps in skills, in turn, exacerbate occupational segregation by sex. Countries that promote specific skill investments have more male-dominated private sectors and fewer women in managerial occupations. In this institutional context, public sector expansion exacerbates sex segregation by creating female dominated public sector. Countries that do not place much emphasis on specific skill acquisition—i.e. general skill regimes—are more gender-neutral. This paper has also identified reasons why women-friendly policies may not counter-act the gender bias of labor market institutions.

Although this paper has not provided any conclusive evidence on the effects of generous leaves, existing empirical studies report greater negative effects of long leaves on women's wage growth in CMEs than in LMEs. High take-up rates of maternity and parental leaves in countries with a very strong job guarantee and generous benefits for long durations seems to stall women's wage growth (see Ondirch, Spiess and Yang 2002). Comparative studies report relatively small—and recoverable—negative effects in the US, where the leave, when available, is very short (Hashimoto, Percey, Schoellner and Weinberg 2004). Some studies report more significant negative effects on women's long-term wage growth in other countries such as Denmark, Germany, Norway and Sweden—all of which are CMEs (Datta Gupta and Smith 2000; Ruhm 1998; Ondirch, et.al. 2002; Stoiber 1990). These findings do not contradict the argument presented in this article: the relatively abundant affordable childcare supply in Scandinavian CMEs appear not to have advantaged women's both vertical and horizontal movements into "male jobs." On various measures of segregation examined in this paper, Scandinavian CMEs score similarly to other CMEs without generous policies for working women.

The argument presented in this paper contributes to three different debates. First, it casts a new light onto the debates about sex segregation. Its emphasis on skills and the institutional environments in which skill acquisition takes weaves together insights from labor economics and institutional studies by embedding the micro-logic in a specific institutional context. The argument in this paper also differs from many of institutional studies of female employment that focus on women-specific institutions such as public childcare provision and employment equality legislation. Instead, it has focused on the

unintended *gendered* consequences of labor market institutions such as employment protection.

Second, this paper generates a new debate over the varieties of capitalism. Although the scholarly debate on the varieties of capitalism has centered on the issue of economic efficiency of different models of capitalism, this paper has revealed their highly *gendered* consequences: *CMEs* are more gender biased than *LMEs*. This gender bias does not disappear even when a Scandinavian sub-group of *CMEs* provides generous social policies for working-mothers.

Finally, the findings in this paper provide a new perspective in thinking about gender equality. One implication of this paper is that reduction in employment protection is likely to reduce sex segregation. Indeed, a separate study on historical changes within the same countries supports such an implication.<sup>xli</sup> What does this take us? Does this imply that employment protection should be reduced if we were to push for a greater level of gender equality? Reduction in employment protection exposes families to greater fluctuations in their life styles and household incomes depending on the generosity of unemployment benefits. The risk is greater for single-earner families than dual earner families. Is it possible to advocate reduction in employment protection in the name of gender equality, and let families cope with greater economic fluctuations by having two earners instead of one? Of course, occupational sex segregation constitutes just one aspect of gender inequality. It nonetheless raises 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 normative goals that our society adheres to.

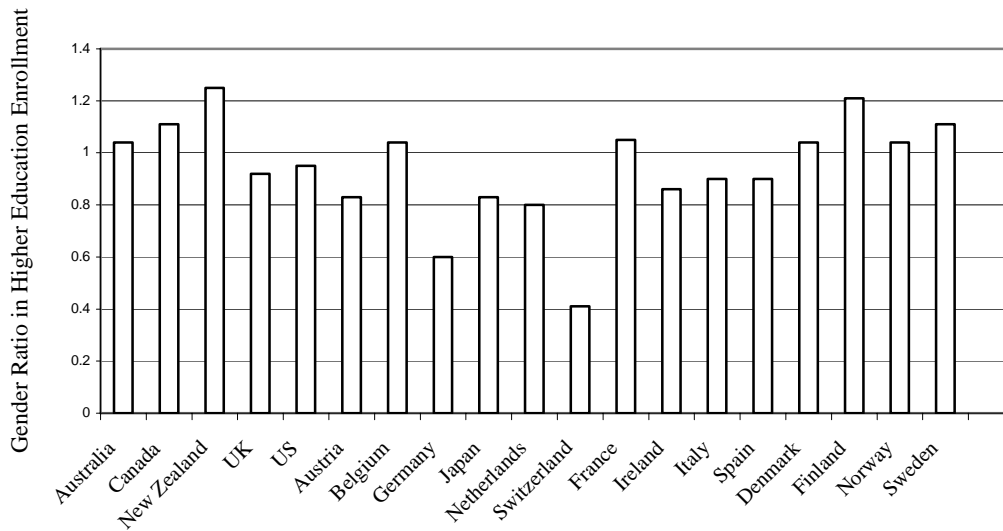


Figure1. Female and Male Occupational Concentration



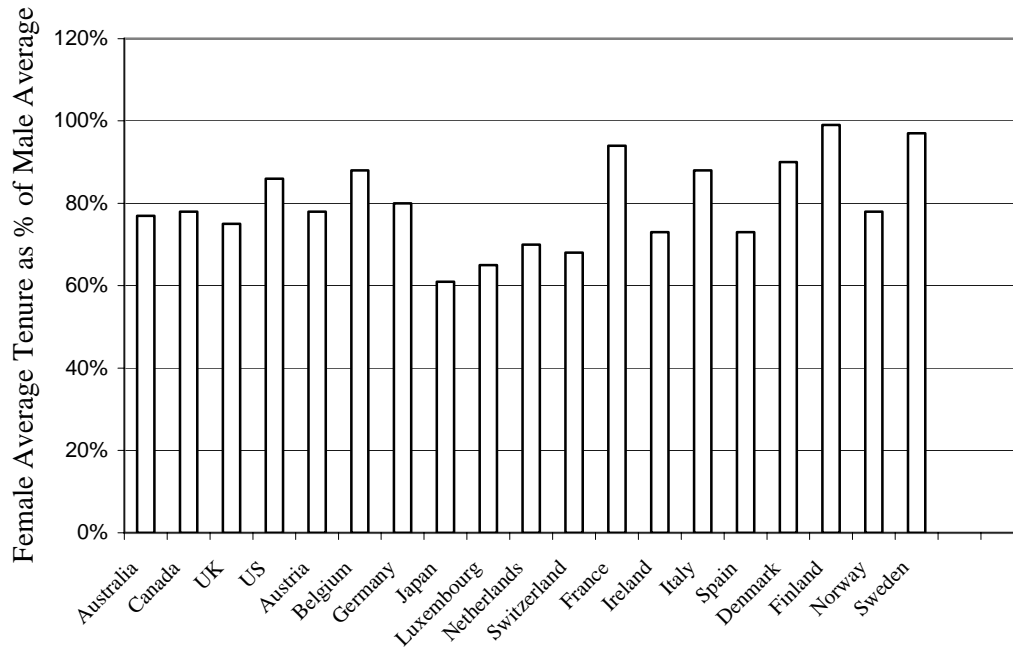
Note: Female- and male-dominated occupations are defined as those occupations where either sex dominates more than 75% of the workforce. The figures are based on Richard Anker's calculations (Anker 1998).

Figure 2. Women's Human Capital Investment



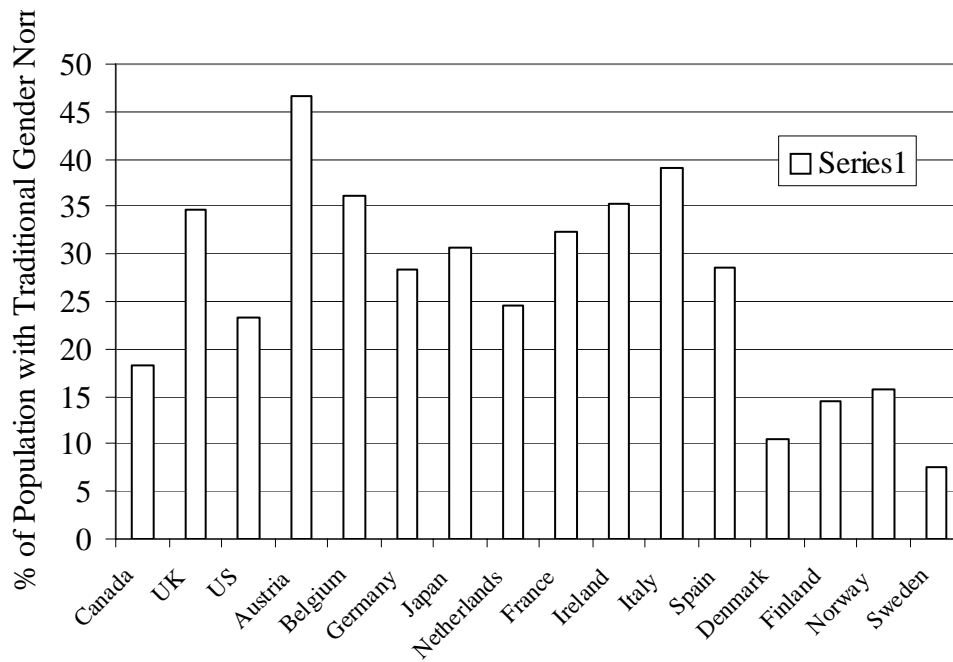
Note: The figures represent female enrollment in higher education as a ratio of male enrollment. 1 means sex equality. Values greater than 1 mean that more women invest in higher education than men.

Figure 3. Gender Gap in Enterprise Tenure



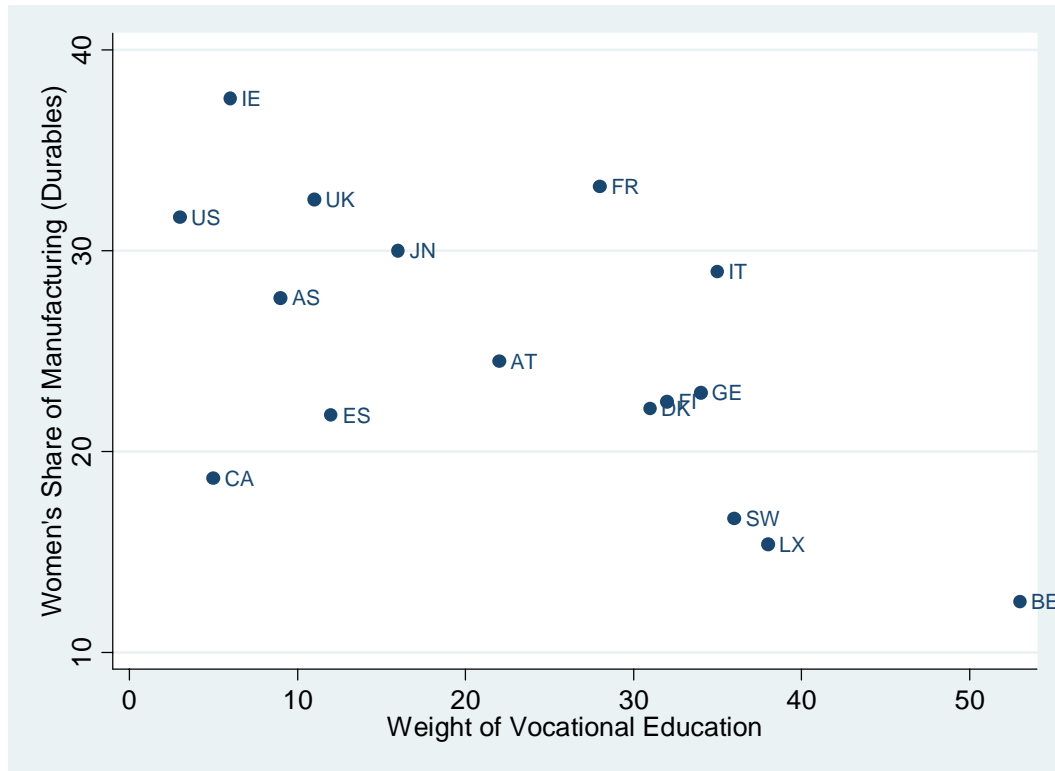
Source: Calculated from OECD Employment Outlook (1993, 1997).

Figure 4. Gender Attitudes



Note: The percentage of respondents agreeing with the statement, “When jobs are scarce men have more right to jobs than women do” in World Values Survey, Wave 1990.

Figure 5. Vocational Education and Women's Share of Manufacturing



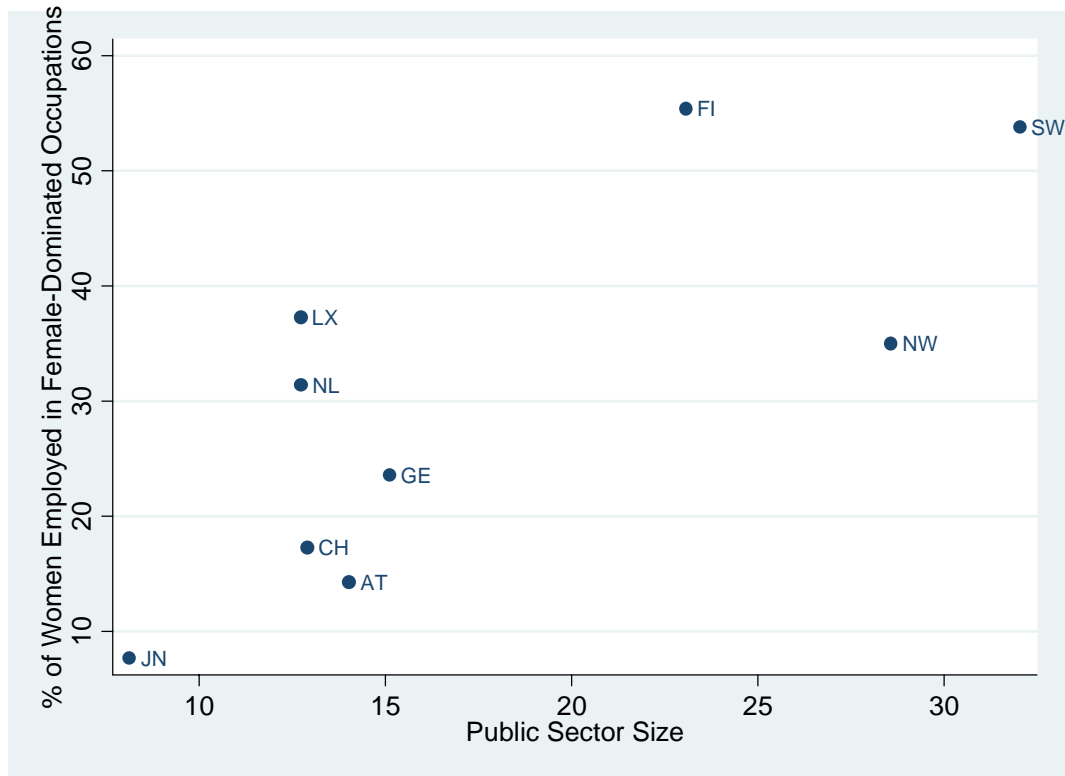
Source: Weight of vocational education (Estevez-Abe, Iversen and Soskice 2001) supplemented by LIS data for Spain and Luxembourg. Data for women's share of manufacturing of durables have been calculated from LIS supplemented by Japanese Labour Force Survey.

Figure 6 Employment Protection and Women's Share of Private Sector



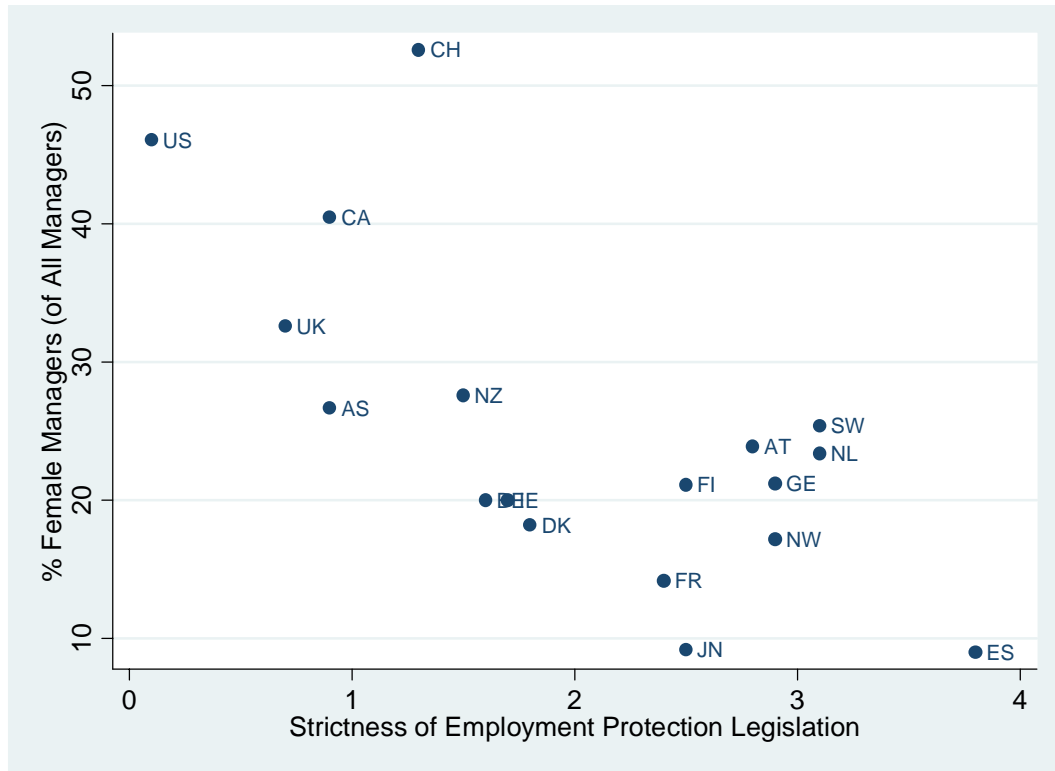
Source: Women's share of private sector jobs have been calculated from LIS data; data for Japan, New Zealand are from ISSP 1997.

Figure 7. Public Sector Size and Female Occupational Concentration in CMEs



Source: Figures for % of women employed in female-dominated occupations are based on Anker (1998); figures public sector size are from OECD online database.

Figure 8. Employment Protection and Women's Advancement into Managerial Jobs



Source: % of female managers have been calculated on the basis of Anker (1998); figures for Belgium, Denmark, Switzerland and UK are based on the LIS data.

Table 1. Women's Under-Investment in Vocational Skills

	Overall Importance of Vocational Education (VOE)  % of population with vocational degree	Gender Gap in VOE Investment  (% of men with vocational degree) minus (% of women with vocational degree)	Gender Gap in Apprenticeships  (% of men with apprentice training) minus (% of women with apprentice training)
Australia	9	10.44	14.74
Austria	22	12.42	18.11
Belgium	53	8.03	
Canada	5	5.72	
Denmark	31	5.97	18.81
Finland	32		
France	28	10	
Germany	34	8	3
Ireland	6	-0.58	8.8
Italy	35	2.41	
Japan	16		
Luxembourg	38	12	3.38
Netherlands	43		
New Zealand	7		
Norway	37		
Spain	12	3.43	
Switzerland	23	15	6.4 (7.71)*
Sweden	36		
UK	11	22	
US	3	-0.47	

\* The figure in parenthesis indicates higher-level of apprenticeship training.

Source: Estevez-Abe, Iversen and Soskice (2001), Luxembourg Income Study, personal file.

Table 2. OLS Regressions Results for % of Women in Manufacturing of Durables

	1	2	3	4
Importance of Vocational Education	-.297**	-.273**	-.353**	-.275*
Employment Protection				.058
Attitudes for Traditional Gender Roles		.291	.359	.293
Generosity of Family-related Leaves			0.687	
Female Labor Force Participation Rate		.0734	.0598	
Constant	31.82***	19.251	17.436	18.883
Adjusted R-squared	.33	.31	.30	.23
N	16	14	14	14

Notes:

The higher the Employment Protection Legislation Index (EPL), the stricter the regulation against dismissal. Attitudes for Traditional Gender Roles is measured as the percentage of population that strongly believe that men have more 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.

Source:

EPL (OECD 2000), Female Labor Force Participation Rate (OECD online database), Gender Gap in Human Capital (OECD, Education At A Glance), Attitudes for Gender Roles (World Values Survey), Generosity of Family Leaves (OECD Employment Outlook 2001, Gauthier 2000, Gauthier and Bortnik 2001, Kamerman 2000).

Table 3. OLS Regressions Results for % of Women in Private Sector Workforce

	1	2	3	4	5
Importance of Vocational Education	-.142	-.176*	-.157		
Employment Protection Legislation	-3.847*	-2.971*	-3.902*	-4.254**	-4.356**
Service Sector Size	-.211		-.198		
Gender Gap in Human Capital					.966
Generosity of Family-related Leaves			0.017	-.005	
Female Labor Force Participation Rate		-.007		-.028	-.038
Constant	67.657**	53.517***	66.741**	53.436***	53.959***
Adjusted R-squared	.48	.46	.43	.44	.31
N	16	16	16	16	16

Notes:

The higher the Employment Protection Legislation Index (EPL), the stricter the regulation against dismissal. Service Sector Size is measured as the share of service sector employment as % of overall workforce. Gender Gap in Human Capital is the difference of female and male investment in higher education. The higher the score the greater women's investment relative to men in their country. Attitudes for Traditional Gender Roles is measured as the percentage of population that strongly believe that men have more 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.

Source:

EPL (OECD 2000), Service Sector Size and Female Labor Force Participation Rate (OECD online database), Gender Gap in Human Capital (OECD, Education At A Glance), Attitudes for Gender Roles (World Values Survey), Generosity of Family Leaves (OECD Employment Outlook 2001, Gauthier 2000, Gauthier and Bortnik 2001, Kamerman 2000).

Table 4. OLS Regressions Results for the Predominance of Female-Dominated Occupations (as % of women employed in occupations where more than 75% of workers are female)

	1	2	3	4	5
Importance of Vocational Education	.481*	.114	-.105	.065	-.014
Employment Protection Legislation			1.962	1.561	
Service Sector Size (a)	1.326**	1.702***	1.838***		.719
Traditional Gender Roles					-.798**(b)
Generosity of Family-related Leaves		.321***	.356***	.167	.228**
Female Labor Force Participation Rate				.931**	
Constant	-70.207*	-95.553***	-105.380**	-42.587*	-6.049
Adjusted R-squared	.30	.66	.68	.62	.83
N	17	16	16	16	13

(a) Because public Sector Size produced no result, I have only included results with Service Sector Size and Female Labor Force Participation Rates.

(b) Correlation between Traditional Attitudes for Gender Roles and Female Participation Rate: -.77 (obs=16)

When only looking at CMEs (nine countries), the size of the public sector and the generosity of leave have statistically significant effects (at 0.01 level).

Table 5. OLS Regressions Results for % of Female Managers

	1	2	3	4	5
Employment Protection Legislation	-8.097***	-7.432***	-8.017***	-6.832**	-6.502*
Service Sector Size		.243		.431	
Gender Gap in Human Capital			-10.679	-12.870	-7.295
Attitudes for Traditional Gender Roles			-.253	-.146	-.110
Generosity of Family-related Leaves				-.0001	-.055
Female Labor Force Participation Rate					.212
Constant	41.360***	24.392	57.040**	26.229	35.794
Adjusted R-squared	.46	.43	.51	.44	.43
N	18	18	15	15	15

Notes:

The higher the Employment Protection Legislation Index (EPL), the stricter the regulation against dismissal. Service Sector Size is measured as the share of service sector employment as % of overall workforce. Gender Gap in Human Capital is the difference of female and male investment in higher education. The higher the score the greater women's investment relative to men in their country. Attitudes for Traditional Gender Roles is measured as the percentage of population that strongly believe that men have more 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.

Source:

EPL (OECD 2000), Service Sector Size and Female Labor Force Participation Rate (OECD online database), Gender Gap in Human Capital (OECD, Education At A Glance), Attitudes for Gender Roles (World Values Survey), Generosity of Family Leaves (OECD Employment Outlook 2001, Gauthier 2000, Gauthier and Bortnik 2001, Kamerman 2000).

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<sup>ii</sup> See Petersen and Morgan 1995; Grusky and Sørensen 1998. McCall (2001, 2005) provides an insightful and thorough discussion on multiple aspects of gender inequality and the relevant literatures.

<sup>iii</sup> Anker 1998; Charles 1990; Charles and Grusky 2004; Grusky and Charles 1995; Hakim 1992; Melkas and Anker 2001; Rosenfeld and Kalleberg 1992; Klausen 1999; Huber and Stephens 2001; Esping-Andersen 1999.

<sup>iv</sup> Hakim, Charles and Grusky Anker Melkas

<sup>v</sup> The widely cited volume edited by Peter Hall and David Soskice titled *Varieties of Capitalism* barely mentions women. The only chapter that discusses gendered implications of VOC is the chapter by Estévez-Abe et al. (2001). Other scholars in this school such as Wolfgang Streeck, Ronald Dore and Masahiko Aoki have not been interested in gendered consequences of different models of capitalism (Streeck 1992; Dore 2001; Aoki 1988). The only exceptions are: Brinton (1988), Heidi Gottfried (2000) and Heidi Gottfried and Jacqueline O'Reilly (2002).

<sup>vi</sup> For the feminist critique of the welfare state literature, see Daly 1994; Daly and Rake 2003; Orloff 1993, O'Connor 1993; Sainsbury 1993; Sainsbury ed. 1994, Sainsbury ed. 1999. For a response to this feminist critique, see Esping-Andersen 1999.

<sup>vii</sup> see Hakim, 1992; Charles 2003; Charles and Grusky 1995, 2004

<sup>viii</sup> Hakim, Nermo, Anker.

<sup>ix</sup> Charles and Grusky.

<sup>x</sup> (Becker 1981; Mincer and Polacheck 1974; Mincer 1962)

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<sup>xi</sup> (Phelps 1972; Aigner and Cain 1977)

<sup>xii</sup> For a good critique of Polachek, see England (1982).

<sup>xiii</sup> In the age cohort 25-64, women in Denmark, Finland, Norway and Sweden all surpass men in the percentage of people with at least one tertiary degree. The women's lead has become bigger and bigger in young cohorts (OECD Education At Glance 2002, Table A3.1.c.). Along with English-speaking countries, Scandinavian countries are leaders in the proportion of the population that possesses tertiary-level education.

<sup>xiv</sup> OECD. 2002. *Employment Outlook*, Table 2.4.

<sup>xv</sup> see England 1982, England and Folbre 2003.

<sup>xvi</sup> Milkman 1986; Bielby and Baron 1986; Rekin and Roos 1990.

<sup>xvii</sup> Correll 2001; Conway, Pizzamiglio and Mount 1996.

<sup>xviii</sup> In fact, this is the argument that Ronald Inglehart and Pippa Norris make (Inglehart and Norris 2003).

<sup>xix</sup> Chang 2000, O'Connor, Orloff and Shaver 1999, Kelly and Dobbin 1999.

<sup>xx</sup> Chang 2000.

<sup>xxi</sup> Mariko Chang (2000), Table 2.

<sup>xxii</sup> Esping-Andersen, Huber and Stephens, Klausen, Martin Rein.

<sup>xxiii</sup> Charles, Buchmann, Halesbky, Powers and Smith 2001; Rubery and Fagan 1995.

<sup>xxiv</sup> See Estévez-Abe, Iversen and Soskice 2001.

<sup>xxv</sup> Japan and Switzerland are exceptions in that their unemployment benefits are not as generous as other CMEs. For other means to protect specific skill investments, see Estevez-Abe (forthcoming).

<sup>xxvi</sup> Although Gary Becker famously argues that employers bear the cost of firm-specific training while employees pay for their general skill acquisition, as many others have later argued, employers do share the cost of general skill acquisition. As Acemoglu and Pischke (1996, 1999) point out, for instance, under certain institutional settings that reduce turnover, employers can safely invest in general skills. The more asymmetry exists between current employers and outside employers over the skill content of the worker, the more the worker's skills resemble firm-specific skills, because his/her skills

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are not easily marketable in the outside labor market. When institutional arrangements reduce labor turnover rates and employers invest in general skills, these skills do possess firm-specific qualities in the sense that outside employers would find it hard to accurately assess the skill of a particular worker. Whether general or firm-specific, the fact that employers rely on OJT makes them value long enterprise tenure and thus be wary of women whose average quit rates are higher.

<sup>xxvii</sup> Or alternatively, women will be placed in a different track within the firm from men.

<sup>xxviii</sup> See my discussion of Acemoglu and Pischke (1996, 1999) in footnote 13.

<sup>xxix</sup> The author has shown, in a different study, that women find it easier to break into previously male (high status) occupations when the job entry is based on objective certification that can be obtained by enrolling in a school.

<sup>xxx</sup> Other scholars have also noted the sex-segregating effects of vocational schools (Rubery and Fagan 1993; Charles et. al. 2001). Although they assume cultural sex-stereotyping as a mechanism by which vocational schools sort girls and boys into different fields, my skill-based approach provides an alternative explanation.

<sup>xxxi</sup> Estévez-Abe, Iversen and Soskice 2001; Mares 2003.

<sup>xxxii</sup> Mandating fathers to take paternity leave has been difficult even in Scandinavian countries (see Peter Moss and Fred Deven, eds., 1999, 25-44).

<sup>xxxiii</sup> Furthermore, countries that offer strong employment protection legislation often also strictly regulate temporary employment, making it difficult for employers to hire replacements. Restrictions of this sort on temporary employment contracts significantly increase the cost to employers of maternity and parental leaves because employers have to maintain a level of employment higher than they otherwise would (to accommodate a certain percentage of female workers to be on leave at any given time).

<sup>xxxiv</sup> See Peter Hall and David Soskice 2001.

<sup>xxxv</sup> Note that the reason why the VOC treats some countries has a lot to do with their relative underperformance in various product markets of interest to VOC authors (Hall and Soskice 2001; Hall and Gingrich 2001). This study does not share the efficiency assumption inherent in VOC. The main interest of this paper is that certain institutional arrangements produce specific gendered effects regardless of whether they are considered as efficient or inefficient.

<sup>xxxvi</sup> In spite of the existence of International Standardized Categories of Occupations (ISCO), many advanced industrial countries continue to use their own idiosyncratic national classifications. Even a stepped-up effort to harmonize income and labor market data represented by the Luxembourg Income Study has not overcome the problem, as the

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data collection relies on each national government that use different categories. As a rule, whenever possible, I tried to use data from one single source for the same variable.

<sup>xxxvii</sup> 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 in vocational tracks than men. UNESCO, “Secondary Technical and Vocational Education,” Statistical Issue, March 1995.

<sup>xxxviii</sup> 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% of enrollment is male (CEDEFOP 1991, 1995a).

<sup>xxxix</sup> Hall and Soskice 2001, Hall and Gingrich 2001, Estevez-Abe, Iversen and Soskice 2001.

<sup>xl</sup> Huber and Stephens, Klausen, OECD (1994).

<sup>xli</sup> On this topic, see Estévez-Abe and Dubin (2003).