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Janet C. Gornick; Jerry A. Jacobs

*American Sociological Review*, Vol. 63, No. 5 (Oct., 1998), 688-710.

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*American Sociological Review* is currently published by American Sociological Association.

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## GENDER, THE WELFARE STATE, AND PUBLIC EMPLOYMENT: A COMPARATIVE STUDY OF SEVEN INDUSTRIALIZED COUNTRIES\*

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**Janet C. Gornick**

*Baruch College,  
City University of New York*

**Jerry A. Jacobs**

*University of Pennsylvania*

*Using data from the Luxembourg Income Study (LIS), we explore the influence of government employment on the gender gap in earnings in seven countries. We address four questions on the effects of public-sector employment on the gender gap in earnings: (1) Do governments offer jobs that are comparatively high paying? (2) Does public employment benefit some workers, such as low-paid workers, more than others? (3) Are public-sector employment advantages explained by differences in worker characteristics and the occupational mix? (4) What is the effect of public employment—its extent and its pay structure—on gender gaps in wages? Our results indicate marked variation across liberal, conservative, and social democratic welfare states, but reveal a number of uniformities as well. In most of the seven countries in our sample, public-sector workers earn more on average than do workers in the private sector, and most earnings advantages are concentrated on the low end of the earnings distribution. The effect of public employment on the overall gender gap in wages is limited in most countries. We discuss the implications of these results for theory and research on gender and the welfare state.*

Public-sector growth has been an important factor in the integration of women into the labor markets of industrialized countries. The growth of government jobs has been associated, across countries and over time, with increased demand for female employment (OECD 1982; Schmidt 1993). Women are now overrepresented among public employees in most industrialized countries, most markedly in the Nordic countries (OECD 1994). Some scholars argue that public employment not only has increased female participation rates, but that it also has constituted a crucial source of especially “good jobs” for women. For example, Kolberg (1991) argues that welfare state em-

ployment in the Nordic countries has “improved the strategic position of women in society” (p. 119). However, systematic cross-national research on the benefits of public employment for women in the labor market is lacking. In particular, few studies have explored the extent to which public employment provides high-paying employment.

Cross-national analysis of the effects of public employment on women’s status in the labor market is important from two perspectives. First, the large and growing comparative literature on gender equality in the labor market would benefit from further analysis of the role of public employment. Second, the effects of public employment on women’s labor market status are thrown into relief again as welfare state retrenchment and public-sector restructuring are widely anticipated and, in some countries, underway (Clayton and Pontusson 1997; Rothenbacher 1997). If and when public sectors face declining budgets (and resultant wage restrictions and/or downsizing) the effects in many countries will be felt most sharply by women.

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\* Direct correspondence to Janet C. Gornick, Department of Political Science, Baruch College, City University of New York, 17 Lexington Avenue, New York, New York 10010 (janet\_gornick@baruch.cuny.edu). The authors acknowledge helpful comments and suggestions from Lourdes Beneria, Jon Eivind Kolberg, Jonas Pontusson, Patricia Roos, Rachel Rosenfeld, Tim Smeeding, and *ASR*’s anonymous reviewers.

Questions concerning the effects of public employment on women's well-being also are intertwined with a broader set of questions concerning the effects on women of welfare state features generally. During the last decade, a new feminist literature on the welfare state has emerged as feminist scholars have incorporated gender-specific factors, both determinants and outcomes, into mainstream welfare state theory and research. Feminist critics have established that mainstream welfare state analyses, including studies of welfare state employment, have been too narrowly class-based and have paid insufficient attention to gender relations (O'Connor 1993; Orloff 1993, 1996; Sainsbury 1994).

The first generation of feminist analyses focused on identifying universal welfare state features, generally those that were detrimental to women's interests (for a review, see Orloff 1996), rather than on exploring variation in the effects on women of public policies across countries. Thus, the early feminist work on the welfare state was not comparative. In recent years the complaint has been raised that "[m]ainstream comparative research has neglected gender, while most feminist research on the welfare state has not been systematically comparative" (Orloff 1993:303). Sainsbury (1994) argues persuasively that variation across countries should be the focal point for research because some systems are comparatively more "woman-friendly," to use Hernes's (1987) term. Orloff (1996) reframes the question to ask: Do welfare state policies reinforce gender hierarchies in some countries and ameliorate them in others?

Feminist welfare state scholarship took a sharp turn toward comparative research in the early 1990s as feminists criticized Esping-Andersen's (1990) *Three Worlds of Welfare Capitalism*. In this work, Esping-Andersen posits the existence of three welfare state regime types—the liberal, the conservative, and the social democratic. Each type is characterized by a relatively similar set of social policies and by corresponding socioeconomic outcomes and employment patterns. Feminists criticized Esping-Andersen's neglect of gender in the construction of this typology, and retheorized underlying dimensions of welfare state variation (O'Connor 1993; Orloff 1993; Sainsbury

1994). Multi-country empirical inquiries followed (e.g., Gornick, Meyers, and Ross 1997; Siaroff 1994). While scholars interested in gender have responded to Esping-Andersen's inattention to women, they have maintained both the focus on welfare state outcomes for women and, for the most part, the use of clusters of like countries in a comparative research framework.

There is now a growing cross-national empirical literature on the gender dimensions of the welfare state; but it is limited, and important lacunae remain. Many analyses are focused on the theoretical difficulties in applying welfare state formulations to gender issues (O'Connor 1993; Orloff 1996; Williams 1995). Empirical studies often compare only two or three countries (e.g., Meyer 1994), while still others focus on a single country (e.g., Siim 1994) and are only implicitly comparative. In addition, the comparative empirical literature on gender and the welfare state is predominantly focused on variation in income-transfer schemes (e.g., Casper, McLanahan, and Garfinkel 1994), supports for mothers' employment (e.g., Gornick et al. 1997; Kamerman 1991), and pensions (e.g., Hill and Tigges 1995). Other mechanisms of welfare state activity, in particular the role of the state as employer, have been neglected.

We respond to the calls of Orloff (1993, 1996), O'Connor (1993), and others for more systematic comparative research on gender and the welfare state. We focus on one of the features of the welfare state that may benefit women economically—namely public-sector employment. The direct provision of large numbers of jobs to be filled by women has long been recognized as one of the potential benefits of capitalist welfare states (Kolberg 1991; Meyer 1994). Comparative analyses have examined effects of the public sector on women's employment levels (OECD 1982; Schmidt 1993). Yet a comprehensive assessment of the welfare state as employer requires an examination of earnings in addition to employment patterns. Clearly, cash remuneration is but one dimension of gender equality in the labor market that varies across countries, along with, for example, occupational benefits, flexibility in working time, promotion opportunities, and authority (e.g., see Wright, Baxter, and Birkelund 1995). We

focus on cash remuneration because it is a crucial element and because our micro data preclude systematic comparative analyses of noncash remuneration and other job attributes.

Here, we ask four questions about commonalities and variability across countries: (1) Do governments offer jobs that are comparatively high paying? (2) Does public employment benefit some workers, such as low-paid workers, more than others? (3) Are public-sector employment advantages explained by differences in worker characteristics and the occupational mix? (4) And what is the effect of public employment, its extent and its pay structure, on gender earnings gaps? We undertake a systematic comparative analysis, using micro data on employment and earnings in seven countries, to answer these questions.

We also contribute to the literature on state employment. By examining public-sector earnings effects in a comparative framework, we assess the variability across countries in the direction and magnitude of earnings differentials between workers in the public and private sectors. Consequently, we are able to show that standard arguments offered for public-sector wage premiums must be augmented to recognize the existence of cross-national variability.

## THE GENDERED WELFARE STATE AND WOMEN'S EMPLOYMENT

### *The Welfare State and Women's Employment*

Feminist critics of mainstream welfare state theory have challenged the use of decommodification—the extent to which social rights eliminate dependence on the labor market—as a core dimension along which welfare states have been compared. The feminist critique is centered on the observation that decommodification is not emancipatory for those with restricted ties to paid work in the first place; persons must be commodified before they benefit from a loosening of their commodity status. Comparisons of welfare states that reflect the reality of women's lives must highlight the extent to which state policies promote women's opportunities to engage, and advance, in paid work.

Orloff (1993) argues that access to paid work should constitute an independent dimension in any model of welfare state variation. O'Connor (1993, 1996) suggests supplementing, or even replacing, the concept of decommodification with that of autonomy, or insulation from dependence more broadly, including economic dependence on family members. Pateman (1988), Lister (1990), and others contend, furthermore, that economic independence is a prerequisite for full citizenship status. Despite remaining conceptual disagreements, much recent scholarship on gender and the welfare state concludes that public policies that support gender equality in the labor market form the core of the "woman-friendly" welfare state.<sup>1</sup>

Responding to the call for comparative welfare state research, empirical researchers have taken up the question of variation across countries in policies that are understood to advance women's position in the labor market. Recent cross-national research has analyzed the policy determinants of variation in women's employment levels and their hours worked; a much smaller literature focuses, as we do in this paper, on the policy roots of cross-national variation in gender earnings gaps among the employed. The consensus emerging in the literature is that *configurations of social policies*, rather than single policies, shape women's employment outcomes.

<sup>1</sup> In an insightful paper, Fraser (1994) notes, however, that framing the quest for gender equity around the promotion of women's employment (i.e., establishing a "universal breadwinner model") has potential drawbacks. Fraser argues that this model is androcentric: "[I]t is the male half of the old breadwinner/homemaker couple, now universalized and required of everyone" (p. 605). As such, it does little to improve the "leisure time" deficit that is so constraining for women; increasing women's attachment to paid work does not relieve them of their "second shift" duties and may actually worsen the time squeeze. We agree with Fraser and others that promoting women's employment is but one approach to increasing gender equity, and that it does not directly improve the gender gap in caregiving. However, we believe that the most feasible way for states to hasten the dismantling of the sexual divisions of labor in both paid and unpaid work in the long term is to promote gender equality in the labor market in the short term.

Esping-Andersen (1990) himself posits that each welfare state model would be associated with a distinct labor market trajectory for women—in particular, that regime types would shape women's employment levels. He argues that women's employment rates would be highest in social democratic countries (primarily the Nordic countries), where both supply and demand are increased by the extensive provision of public services. He predicts moderate levels of female employment in the liberal (English-speaking) countries, where workers, including women, are less decommodified and alternatives to labor market income are limited. The lowest levels of women's employment would occur in the conservative countries (i.e., continental Europe) because of slow growth in the service sector and policies that encourage mothers to remain in the home.

Several researchers have established this employment pattern predicted by Esping-Andersen empirically (Gornick forthcoming; OECD 1994); others have explained the outcomes by a broader set of policies—policies that vary largely, though not entirely, across the three regime types. Higher female employment levels in the social democratic countries, as compared with the other two regime types, are further attributed to an overall pattern of high levels of child care and/or parental leave (Gornick, Meyers, and Ross 1998; Rosenfeld and Birkelund 1995; Schmidt 1993), and to policies that encourage part-time and reduced-hour work (Gustafsson 1994). Moderately high levels of female employment in the liberal countries are further explained by tight links in these countries between employment status and a range of noncash benefits (Gornick forthcoming), links that are often described as “work-forcing.”<sup>2</sup> Women's employment in

the continental countries is relatively depressed by a combination of factors, including social security rules that discourage part-time work (Euzeby 1988), tax code features (Gustafsson 1991), and a historical reliance on immigrant workers (Gustafsson 1994).

The literature examining the effects of policy on cross-national variation in the gender earnings gap, which tends to be narrowest in the social democratic countries (Gornick forthcoming; Kolberg 1991; Rosenfeld and Kalleberg 1991), is more limited. In an influential paper, Blau and Kahn (1992) report that a considerable amount of cross-national variation in the earnings gap is explained by overall earnings inequality: In countries with more compressed earnings distributions, women's median earnings, while still at the lower end of the distribution, fall closer to men's earnings. Thus, any public policies and programs that narrow the overall earnings distribution, such as policies supporting unions and/or the presence of centralized wage-setting institutions, will, by implication, narrow the gender earnings gap. Indeed, Whitehouse (1992) reports a strong positive relationship between centralization of wage-setting and the gender earnings ratio; Rosenfeld and Kalleberg (1991) report that corporatist countries tend to have high gender earnings equality. Interestingly, policies aimed specifically at *women*, including elements of family policy (Rosenfeld and Kalleberg 1991) and equal pay–equal opportunity legislation (Whitehouse 1992), seem to have little or no independent effect on the magnitude of gender earnings gaps.

### *Women and Public Employment*

High levels of public employment, both across countries and over time, have been positively associated with high levels of female employment (Kolberg 1991; OECD 1982; Schmidt 1993; Whitehouse 1992). Huber and Stephens (1996) note that the relationship between levels of public employment and female employment works in both directions: “[R]ising women's labor force participation feeds demands for social services which both enable women to enter the labor force and provide employment for them” (p. 3).

<sup>2</sup> The extent to which the U.S. labor market is “work-forcing” for women, or “work-facilitating,” remains an open question. Indeed, the U.S. women's movement has made some important gains in legislation that would increase employment opportunities for women; the antidiscrimination apparatus has clearly opened doors for women, in particular by desegregating some occupations and reducing barriers to women's upward advancement. Moderately high levels of female employment in the United States likely result from both forces.

Kolberg (1991) claims that state employment has provided beneficial opportunities for women in the labor market. Focusing on the social democratic welfare states of Denmark, Finland, Norway, and Sweden, he argues that the "welfare state-labor market mix has improved the strategic position of women in society" (p. 119). Kolberg demonstrates that women in Denmark's public sector are far more likely to be employed in management than are their private-sector counterparts, and that Norway's public sector has a higher gender earnings ratio than does its private sector. Kolberg argues that in the social democratic countries the state in its role as employer has increased the economic security of women workers. Thus, he offers a direct challenge to those feminist sociologists who describe the state's relationship to women largely as one of patriarchal social control (e.g., Dahlerup 1987). Thus, Kolberg's analysis of the provision of "good jobs" for women in the public sector provides a useful starting point for a comparative analysis of the gendered effects of public-sector employment. His study is limited, however, by the narrow range of countries considered and the near absence of data on sectoral differences in earnings for women.

The effect of public-sector employment on gender equality in earnings has received limited attention in cross-national research. In a study of nine countries, Rosenfeld and Kalleberg (1991) report that gender earnings ratios in the full-time labor force are higher in the public sector than in the private sector in eight of the nine countries (except Sweden). In a study of the OECD countries, Whitehouse (1992) finds that government employment is positively associated with the female/male wage ratio. She concludes that "the greater scope for regulation of working conditions in public employment, and the lower degree of exposure to market pressures, allows this sector to act as a pace setter—particularly in the area of wage equality" (p. 79). No published studies using individual-level data (i.e., with controls for worker or occupational differences between the two sectors) have considered cross-national variation in the effect of public-sector employment on either women's earnings or on the gender gap in earnings in as much detail as we do here.

## RESEARCH QUESTIONS AND EXPECTATIONS

### *The Comparative Framework: Country Clusters*

Largely due to Esping-Andersen's (1990) influence, it is now commonplace for scholars of the welfare state to focus on welfare state regime types (i.e., groups of countries with similar characteristics). Esping-Andersen's typology includes: the *social democratic welfare states*, which primarily include the Nordic countries (represented in our analysis by Sweden); the *conservative (or corporatist) welfare states*, which are dominated by the continental European countries (represented here by Belgium, Germany, and the Netherlands);<sup>3</sup> and the *liberal (or residual) welfare states* (represented here by Canada, the United Kingdom, and the United States). In the social democratic regime, entitlements draw on the principle of the universal rights of social citizenship; in the conservative regime, entitlements are based on work performance; in the liberal countries, entitlements derive primarily from assessments of individual need.

We use Esping-Andersen's (1990) clusters as an organizing framework for our empirical analysis. Nevertheless, we have two reservations. The first reservation concerns the degree to which any country's policies affecting women do, in fact, constitute a distinct and coherent policy package. State policies are often ambivalent or contradictory with respect to women's rights. Welfare systems are the product of decades of incremental growth and shifting political tides, and consequently should not be assumed to be consistent either in philosophy or in impact regarding the roles of women. Certain elements of a country's welfare state package may reinforce gender equality and women's autonomy, while other features actually may ameliorate it (Orloff 1993). Thus, the distinc-

<sup>3</sup> In Esping-Andersen's (1990) work, the placement of the Netherlands is problematic, as it incorporates features of both social democratic and conservative-corporatist welfare states. Recent critics of Esping-Andersen's work (e.g., Sainsbury 1994) have placed the Netherlands in the conservative-corporatist cluster, and we follow their lead.

tive feature of Esping-Andersen's approach—namely, the analysis of an integrated policy package rather than selected elements—may be less applicable for gender than it has proven to be for class.

Our second reservation concerns whether gender effects actually cluster together into the three distinct "regime types" that Esping-Andersen (1990) has proposed. A small body of empirical work has challenged the Esping-Andersen model by focusing on *within-cluster* variation in policies and outcomes with disproportionate importance for women. This work suggests that the social democratic cluster remains the most homogeneous with respect to gender effects, while the conservative cluster appears to be the most heterogeneous (Borchorst 1994; Bussemaker and van Kersbergen 1996; Leira 1992; Sainsbury 1996).<sup>4</sup>

Despite these concerns, we use Esping-Andersen's (1990) clusters as a framework for our analysis. First, there is reason to believe that welfare state employment patterns will vary in accordance with these welfare state clusters because the size of the welfare state shapes and is shaped by the extent of services provided. The size, and thus the potential impact, of the welfare state as employer thus should be related to its position in the regime cluster matrix. Second, we use these clusters as a starting point because recent empirical work (e.g., Gornick et al. 1997; Siaroff 1994) suggests that the Esping-Andersen clusters turn out to be surprisingly robust with respect to women's economic opportunities. Finally, the use of the country cluster model enables us to conduct a focused comparison on a modest sample of countries. It is well recognized in comparative research that there are many variables and too few industrialized countries on which to test their influence. Esping-Andersen's (1990) clusters enable us to draw on a developed body of knowledge that incorporates the histories of these countries. In short, our analysis of country clusters should enable us to identify commonalities and dif-

ferences across regime types, even if we may not always be able to say definitively what it is about these countries that accounts for the variation observed.

### *Questions and Expectations*

We now propose four sets of questions that shape our empirical analysis of the relationship between public-sector employment and women's earnings. Each question concerns our expectations of cross-national commonalities in aspects of public employment and of cross-national variations within those patterns.

*Question 1:* Do average unadjusted public-sector earnings exceed private-sector earnings in all countries examined? Does the magnitude of the sectoral differential vary systematically across countries? Specifically, are public-sector premiums smallest in the social democratic case (which has the most extensive public sector) and largest in the liberal countries (which have public sectors of more limited size)?

We expect median public-sector earnings to exceed private-sector earnings in all countries, based on an array of comparative and single-country studies. In the United States, a sizable literature exists on public/private wage differentials, both unadjusted and adjusted.<sup>5</sup> Nearly all prior studies find an *unadjusted* public-sector earnings premium (i.e., a pay premium that does not account for compositional differences in worker and job characteristics) and several studies find an *adjusted* premium as well (for a review, see

<sup>4</sup> This heterogeneity occurs because some conservative countries, such as France, provide extensive employment supports for mothers, while others, such as Germany, do not (Gornick et al. 1998).

<sup>5</sup> We use the term "unadjusted public/private earnings differential" to refer to the differential between the public and private sectors that is observed without adjusting for the effect of control variables in a multivariate analysis. The complementary term, "adjusted wage differential," refers to the differential that remains after controls are included in a multivariate analysis. Furthermore, when discussing our analysis of the Luxembourg Income Study (LIS) data, we use the term "earnings" to refer to "annual earnings," which includes monetary compensation for work, but does not include fringe benefits. We use the term "wages" to refer to hourly wages, that is, earnings per hour.

Moulton 1990; also see Belman and Heywood 1995; Poterba and Rueben 1994). Few researchers have explored the public-sector/private-sector earnings gap from a cross-national perspective, mostly due to the long-standing lack of comparable data. Nevertheless, a few studies indicate that public-sector workers tend to earn more than do their private-sector counterparts in a range of countries (Bardasi 1996; Heller and Tait 1983; OECD 1994; Pedersen et al. 1990; Rose 1985).

Clearly, one reason that the public sector is expected to pay more is that the nature of the work, primarily a combination of service delivery and regulation, necessitates hiring an educated workforce and offering a favorable mix of occupations (Rose 1985). There is, however, a range of other intertwined factors that push pay upward in the public sector—in all likelihood, both across and within educational and occupational groupings. First, it is argued, public-sector managers may consider the political ramifications of public expenditures and thus not focus strictly on minimizing costs (Heywood 1991). Second, high public-sector wages have been attributed to high levels of unionization (Belman and Heywood 1991; Rose 1985). Third, the higher level of workplace regulation in the public sector and the relative protection from market forces (Whitehouse 1992) would be expected to raise the floor on the public pay scale. These and other arguments hold that wage premiums should be a general feature of government employment.

We also expect, however, that the magnitude of the public-sector earnings premium will vary across countries. Our central expectation is that the magnitude of the public-sector wage premium will be inversely related to the extent of public-sector employment (i.e., we expect the public-sector/private-sector differential to be largest in those countries with the smallest welfare states, and smallest in countries with the largest welfare states). We posit that the fiscal constraints of large welfare states tend to reduce the earnings of public-sector workers.

As early as the 1960s, Baumol (1967) argued that the financial pressures on the state were likely to be endemic because of lower productivity growth of social services com-

pared with manufacturing. Later, O'Connor (1973) posited that the "fiscal crisis of the state" was due to the conflicting demands of legitimation and capital accumulation. The 1980s and 1990s have seen continued fiscal pressures on the state: The public-sector deficits in the United States have been a prominent political issue throughout this period, and in Europe, high unemployment and the monetary requirements of joining the European Union have exerted powerful pressures favoring governmental fiscal austerity. These pressures have resulted in a leveling of public-sector employment and a reduction in the earnings of public-sector workers (OECD 1994; Pedersen et al. 1990).

We expect that these forces will tend to reduce public-sector earnings in the states with the highest levels of public-sector employment. Specifically, we expect Sweden's public-sector workers to report relatively low earnings compared with those in the liberal welfare states. This expectation is consistent with Pedersen et al.'s (1990) findings of relatively low public-sector wages in Denmark, and Bardasi's (1996) observation that lower relative wages in the public sector are usually found in the Northern European countries.

An alternative possibility is that public employment will pay more overall, but that the public premium will be less in countries whose public sectors are most highly "feminized." A variety of studies have documented the finding that the larger the female share in a position, occupation, or industry, the lower the pay for both women and men (Reskin 1993). This literature suggests that public-sector jobs may pay less in those countries where the public sectors have high concentrations of women workers.

*Question 2:* Is the earnings advantage for public-sector employees concentrated at the low end of the earnings distribution? Does this pattern vary systematically across countries? In particular, is the concentration of the public-sector premium on the low end of the earnings distribution more prominent in the less regulated liberal countries, where private-sector earnings are expected to be most dispersed relative to public earnings?



We expect public-sector earnings premiums to be concentrated at the low end of the earnings distribution in all countries because earnings distributions in each country's public sector will be more compressed than those in the private sector. The result of "higher floors" combined with "lower ceilings" in the public sectors would be that the public-sector premiums will be of greater magnitude at the low end of the earnings distributions. In other words, we expect the public-sector earnings distributions, generally, to lie "within" the private distributions, with public-sector earnings neither falling as low nor rising as high as private-sector earnings.

These interrelated expectations—of greater public-sector earnings premiums at the bottom and more compressed wages in the public sectors generally—also are based on piecemeal prior research; again, systematic cross-national studies are not available. In the United States there is evidence that salary structures are narrower in the public than in the private sector. Katz and Krueger (1991) find that public-sector jobs offer higher wages for high school graduates but lower wages for college graduates. Poterba and Rueben (1994) report a net public-sector wage premium at the lowest salary levels and the reverse at higher salary levels (also see Freeman 1987; Katz and Krueger 1991). Despite overall evidence of higher earnings in the public sector, OECD (1993) reports that many European civil services report difficulty in hiring at the managerial and executive levels.

Furthermore, we expect this pattern—of pay advantages concentrated at the bottom—to be strongest in the less regulated labor markets of the liberal countries and weakest in the more regulated social democratic labor market. Our expectation is that in the liberal countries private wages will be more dispersed relative to public pay; this predicts a pattern of more graded public-sector/private-sector pay differentials, with larger differentials on the low end of the distribution, in those countries.

*Question 3:* To what extent are public-sector/private-sector wage differentials explained by sectoral differences in worker characteristics and occupation? Does the cross-national variation in adjusted pre-

miums parallel the pattern of the unadjusted premiums (i.e., are adjusted public premiums smallest in the social democratic case, with the largest public sector, and largest in the liberal countries, with smaller public sectors)?

Our expectation is that public workers in most countries will have higher educational levels and will be more likely to work in professional and managerial positions. We expect however, that controlling for these factors will not eliminate all public-sector/private-sector pay differentials. As noted earlier, we posit that several intertwined factors contribute to the public pay premiums (e.g., political forces in public management, union wage effects, and insulation from market forces), and these factors are expected to push public pay upward to some extent, *within* educational levels and occupations.

As for cross-national variability, we expect that the same factors that attenuate public pay premiums in the social democratic countries more than in the liberal countries, primarily government fiscal pressures, will be in force. Thus, we have the same expectation for the adjusted public-sector premiums as for the unadjusted: They will be smallest in the social democratic case and largest in the liberal countries.

*Question 4:* What is the effect of public employment—its extent and its pay structure—on gender wage gaps? How variable is the effect of public employment?

A number of studies, mostly single-country studies, find that the gender gap in wages is smaller in public employment than in private employment (Freeman 1987; Rosenfeld and Kalleberg 1991). This is largely due to the mix of occupations, that is, the concentration of highly skilled female-dominated professions in the public sector. Extending the logic of Blau and Kahn (1992), discussed earlier, the more compressed wage structures in the public sectors should also lead to narrower gender earnings gaps in the those sectors. These two factors should work hand in hand; thus, we expect that unadjusted gender earnings gaps will be narrower in the public sector in all countries.

Furthermore, we expect that the overall effect of public employment in most coun-

tries—its extent and its pay structure—will be to narrow the gender wage gap in the labor force as a whole. This is because government jobs pay more on average than do private-sector jobs and because women are concentrated in these positions, as we document below. In statistical terms, we expect the combination of high public-sector employment and high wages to suppress, rather than contribute to, the gender gap in earnings. However, the magnitude of the public-sector effect, as a whole, depends on the combination of the level of public employment, the degree of women's concentration in the public sector, and the relative magnitude of the public-sector wage premiums for both men and women. The variation across countries in the effect of public employment on the gender wage gap remains an open question.

## DATA AND METHODS

### *Data*

The data are from the Luxembourg Income Study (LIS), an archive of micro data sets gathered and rendered comparable from several industrialized countries. These data sets, are based primarily on household surveys and contain detailed data at the individual and household levels on a range of demographic, labor market, and income variables. Results from the LIS data will provide more comparability than other cross-national comparisons because the data sets are larger and consequently more reliable than, for example, Wright's Comparative Class Structure survey data (see Wright, Baxter, and Birkelund 1995), and, unlike the official data published by OECD, they allow for micro-level analyses.

Our study uses seven data sets from the third wave (1989–1992) of the LIS data. All data sets were included for which the following information was available: annual earnings, public employment status, usual number of hours worked per week, educational attainment, and occupation. For the survey names, dates, and sample sizes, and for more information on LIS, see Tombeur (1997).

The initial sample selected in each country included all working-age adults (ages 18 to 64), excluding the agricultural sector and the

self-employed. Individuals were coded as employed if they reported working at least one hour per week on a usual basis. Our analysis focuses on employed individuals because we are primarily interested in earnings; we thus exclude both the unemployed and those not in the labor force.

Employed individuals were then coded as being employed in either the public or the private sector (coding scheme is available from the authors). Further, educational levels and occupational groups were coded as a series of dummy variables: Individuals were coded as having attained low, medium, or high levels of education (using country-specific educational standards), and as being employed in one of three broad occupational groupings—professional/managerial, sales/clerical/service, or blue-collar. Following the consensus in cross-national empirical research, we used relatively few categories when coding our major independent variables in order to maximize comparability across countries.

### *Methods*

Our empirical strategy involves several stages of analysis. (1) We compare across countries overall employment rates and public-sector employment rates by gender. (2) To assess cross-national variation in gross (unadjusted) public/private earnings differentials, we limit the sample to full-time workers and we calculate and compare median annual earnings by sector and by gender in each country. (3) To assess variability in the public/private differential throughout the earnings distribution, we present earnings of public and private workers for each earnings decile. (4) We calculate the ratio of the annual earnings of the 90th percentile earner to the 10th percentile earner. This measure of earnings inequality has the virtue of being insensitive to data errors and outliers in the extremes of the wage distribution. (5) To estimate the regression-adjusted effects of public-sector employment on annual earnings, net of differences in productivity-related and job-related variables, we construct standard semi-log wage equations, identically specified across countries.

We estimate the parameters of the wage equations for women and men separately, us-

ing ordinary least squares (OLS) regression; the dependent variable is logged annual earnings. Independent variables include weekly hours worked, age and age-squared, education, occupational group, and a dummy variable indicating public-sector employment (= 1). Thus, our basic approach, drawing on techniques used widely in research on the gender earnings gap, is to take the estimate of the coefficient on the public-sector variable as the measure of the independent effect of public employment on earnings.

We face a standard estimation problem—we have observed earnings only for those persons who are employed. This presents a selection problem, which we resolve by using a two-stage estimation procedure. In the first stage, we use logistic regressions to model the probability that persons are employed; the independent variables include the number of children, age of the youngest child, marital status, respondent's age and education, and other household income (Killingsworth and Heckman 1986). In the second stage (the wage equations), we select only employed persons and add to the list of regressors a transformation of each worker's predicted employment probability.<sup>6</sup>

Last, to estimate the role that gender differences in both public-sector employment rates and public-sector wage premiums play in the gender wage gap, we decompose gender wage gaps into differences attributed to gender differences in population characteristics versus differences in returns to those characteristics, and also differences attributed to interactions between the two.

We group countries into three clusters using Esping-Andersen's (1990) typology. In our sample of seven countries, we have one social democratic case (Sweden), three conservative cases (Belgium, Germany, and the Netherlands), and three liberal welfare states (Canada, the United Kingdom, and the United States). Fortunately, recent research (cited above) suggests that the social democratic countries, especially Sweden, Denmark, and Finland, are the most homogeneous with respect to gender-related policies.

<sup>6</sup> A selection correction for full-time employment, rather than all employment, produced nearly the same results.

Finally, a note on part-time work: In this paper, we include part-time workers in the initial analyses of employment and public employment levels (Table 1 and Figure 1), but we exclude them from the subsequent earnings analyses. We include them initially to provide a comprehensive view of employment patterns, generally, and of public-sector patterns specifically. We exclude part-time workers, using the cross-national standard of 35 hours, from all of the earnings analyses for three reasons. First, analyses (not shown) indicate that rates of public-sector employment in the countries studied are not substantially different between part-time and full-time workers. Second, we hold that part-time employment in most countries (with the exception of some of the Nordic countries) does not typically promote either economic independence among women or gender equality, and consequently the benefits of public-sector employment are best assessed among full-time workers.<sup>7</sup> Third, data on actual hours worked *among part-time workers*, especially those with the fewest hours, tend to be suspect in survey data, making the estimating of hourly wages of "short-hour" workers difficult.

## RESULTS

### *Background: Employment and Public Employment*

Table 1 and Figure 1 set the context for the analysis of earnings that follows. They present cross-national employment rates and public-sector shares for women and men. Countries are organized by welfare state regime type. The results presented indicate,

<sup>7</sup> Several studies have documented that rates of part-time work vary across countries—markedly for women, modestly for men—and that part-time workers tend to hold different jobs and receive less cash compensation per hour than their full-time counterparts (Gornick and Jacobs 1996; Rosenfeld and Birkelund 1995). The cross-national pattern is complex; variation in part-time rates is extensive both across and within the three regime types (Gornick forthcoming). The policy determinants underlying the cross-national variation in part-time work are only sketchily understood, although this question is now receiving much attention.

**Table 1. Employment Rate by Regime Type, Gender, and Employment Sector: Adults from Seven Countries, Ages 18 to 64**

Gender/Sector	Social Democratic	Conservative			Liberal		
	Sweden 1992	Belgium 1992	Germany 1989	Netherlands 1991	Canada 1991	United Kingdom 1991	United States 1991
Women's employment rate	67.7	43.2	51.4	47.5	61.9	60.5	65.0
Percent public-sector	60.1	41.2	30.9	23.4	22.4	20.8	19.4
Percent private-sector	39.9	58.8	69.1	76.6	77.6	79.2	80.6
Men's employment rate	69.4	63.9	76.9	78.0	71.5	74.8	79.4
Percent public-sector	23.3	29.3	23.1	20.1	18.2	13.8	14.8
Percent private-sector	76.7	70.7	76.9	79.9	81.8	86.1	85.2
All adults:							
Percent public-sector	41.5	34.3	26.0	21.4	20.2	17.2	17.1
Percent private-sector	58.5	65.7	74.0	78.6	79.8	82.8	82.9

*Note:* Includes all adults in the labor force, both full-time and part-time.

*Source:* Luxembourg Income Study.

first, that women's employment rates—both absolute and relative to their male counterparts—vary across countries. In line with the predictions of Esping-Andersen (1990) and others, women's employment rates are lowest (43 to 51 percent) in the conservative European countries (Belgium, the Netherlands, and Germany), moderately high (61 to 65 percent) in the liberal regime countries (Canada, the United Kingdom, and the United States) and highest (68 percent) in the one social democratic case, Sweden. Because men's employment rates vary much less, the cross-national portrait of women's employment rates, relative to men's, is nearly the same.

Second, the LIS data confirm that the size of the public sector (public employment as a share of total employment) varies considerably across countries. In Table 1, the cross-national ordering also is consistent with the welfare state regime characteristics: The highest overall levels of public-sector employment occur in the high-service social democratic case (41.5 percent), followed by the conservative countries (21.4 to 34.3 percent),<sup>8</sup> which provide moderate levels of

public services: The liberal (or "residual") welfare states, not surprisingly, have the lowest levels of public-sector employment (17.1 to 20.2 percent).

Third, taken together, these results indicate that the cross-sectional relationship between the size of the public sector and women's employment levels is not straightforward.<sup>9</sup> Table 1 shows that a large public sector can contribute to high levels of employment for women, as is the case in Sweden, but that countries with small public sectors also may have high female employment rates, as in the United States and other liberal welfare states. Because large public sectors are neither necessary nor sufficient to produce high levels of women's employment, it is important to assess the quality of public jobs and their remuneration, across welfare states, and not simply the level of women's employment.

Fourth, women's public-sector employment rates are greater than men's in all seven countries studied (see Table 1). Women are

countries, has a policy mix that leans toward transfers rather than services (Bussemaker and van Kersbergen 1996). Transfers are not as labor intensive; thus the Netherlands has a smaller public sector than its conservative neighbors.

<sup>9</sup> The relationship between the size of the public sector and women's share of employment is not statistically significant ( $r = .21, p < .65$ ).

<sup>8</sup> The Netherlands' "borderline" placement is not surprising. The Dutch welfare state, while much more developed than those in the liberal

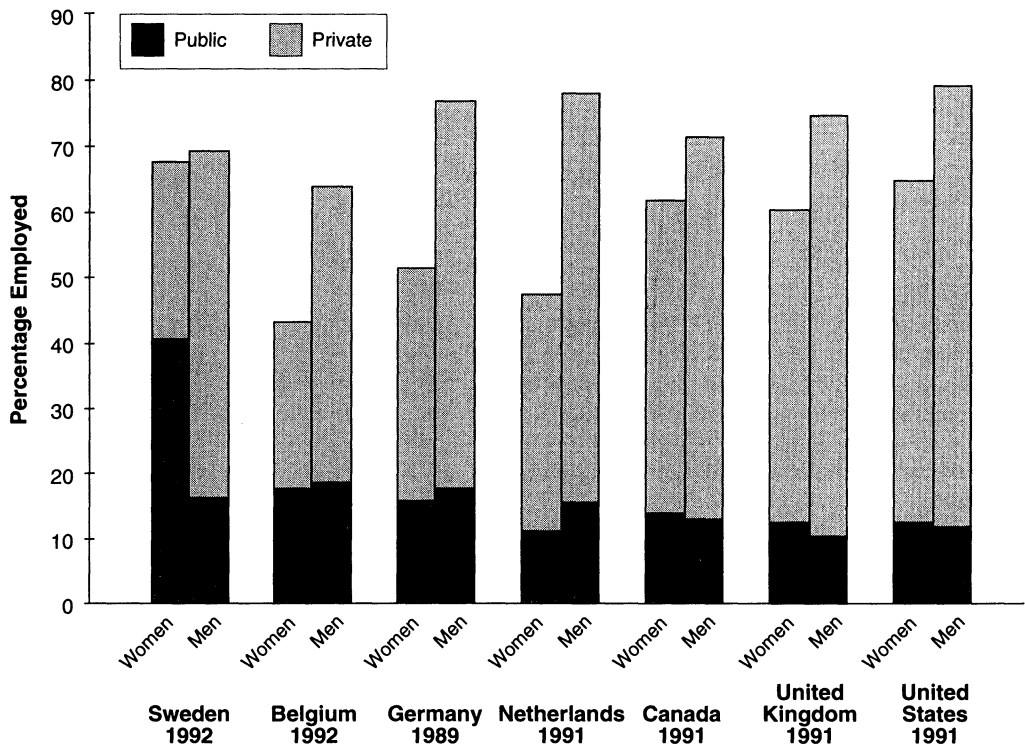


Figure 1. Employment by Sector and Gender: Adults from Seven Countries, Ages 18 to 64

Note: Includes all adults in the labor force, both full-time and part-time.

Source: Luxembourg Income Study.

(significantly) overrepresented among public-sector workers in all countries, although the magnitude of that overrepresentation varies widely. Sweden has the highest overall public employment and also the highest level of female overrepresentation: Fully 60.1 percent of employed women in Sweden are government employees. The conservative and liberal countries exhibit less gender differentiation in public-sector employment rates.

#### *Unadjusted Public-Sector versus Private-Sector Earnings Differentials: Question 1*

Table 2 presents unadjusted public-sector/private-sector earnings differentials by gender for full-time workers. As expected, both men and women earn significantly higher pay in the public sector in all countries. Furthermore, the public pay/private pay differential is greater for women than for men in all countries, with the notable exception of Sweden (see Figure 2) where men's and women's earnings are nearly the same.

The results also indicate that the magnitude of the earnings premium for public-sector employees varies widely across countries: with small premiums in the social democratic case, moderate premiums in the conservative countries, and larger premiums in the liberal countries. Among women, public-sector/private-sector earnings ratios range from a very modest 1.04 in Sweden to a much more substantial 1.37 to 1.50 in the liberal countries. Among men, public-sector/private-sector ratios range from a modest 1.05 in Sweden to between 1.24 and 1.31 in the liberal countries.

What explains this cross-national variability in pay premiums for public-sector work? As noted earlier, our contention is that the variation across regime types is primarily due to variation in the size of the public sector. Figure 2 plots unadjusted public-sector earnings premiums against the size of the public sector (i.e., public employment as a percentage of total employment). Overall, Figure 2 indicates that the public-sector earn-

**Table 2. Unadjusted Public-Sector/Private-Sector Earnings Ratios by Gender and Employment Sector: Adults from Seven Countries, Ages 18 to 64**

Gender/Sector	Social Democratic	Conservative			Liberal		
	Sweden 1992	Belgium 1992	Germany 1989	Nether- lands 1991	Canada 1991	United Kingdom 1991	United States 1991
<i>Median Annual Earnings (in National Currency)</i>							
Women:							
Public-sector	151,400	1,168,200	37,730	41,241	29,860	13,623	23,000
Private-sector	145,029	1,044,000	30,482	34,446	22,154	9,100	16,800
Men:							
Public-sector	189,992	1,428,500	52,178	57,000	41,372	17,761	31,050
Private-sector	180,467	1,311,800	48,901	49,960	31,557	13,829	25,000
<i>Public-Sector/Private-Sector Earnings Ratios</i>							
Women	1.04	1.12	1.24	1.20	1.35	1.50	1.37
Men	1.05	1.09	1.07	1.14	1.31	1.28	1.24

Note: All public-sector/private-sector earnings differences are significant at  $p \leq .05$ . Includes adults in the full-time labor force only.

Source: Luxembourg Income Study.

ings premium declines as the size of the public sector increases, as we expected. The countries with the smallest public sectors (the liberal countries) have the largest earnings premiums, while Sweden, which has the largest public sector, has a very small public-sector earnings premium. The correlation between the percentage share of employment in the public sector and the size of the public-sector earnings premium is strongly negative for both women ( $r = -.898, p < .01$ ) and men ( $r = -.806, p < .05$ ). This finding is consistent with our understanding, based on theory and prior research, that fiscal pressures will increase with the size of the public sector, and resultant public-sector wage restraint will increase as well.

It is notable that the results presented in Figure 2 do not support either of two alternative explanations. One possible explanation is that variation across countries in the degree of earnings dispersion might explain variation in the public-sector premiums, with large premiums occurring where dispersion is wide. The correlation between the degree of earnings dispersion and the magnitude of the public-sector earnings premium is positive, but it is not significant for either women ( $r = .198$ ) or men ( $r = .509$ ). Likewise, the results do not support the explanation that public-sector earnings premiums fall as

women's concentration in the public sector rises. The correlation between the odds ratio of women's to men's employment in the public sector and the public-sector earnings premium is sizeable, but is not statistically significant for women ( $r = -.612$ ) or for men ( $r = -.516$ ). The "dispersion" and "feminization" theses may well fare better with a larger sample.

Given our sample of seven countries, we are unable to determine with precision that the causal mechanism underlying variation in the premiums is public-sector size. As suggested earlier, policy packages tend to vary across the three regime types, and there are not enough cases *within* regime types to model the independent effects of individual policies or policy features.

#### *Variation across the Earnings Distribution: Question 2*

Table 3 presents public-sector/private-sector earnings ratios by earnings percentile, for both women and men. In each country, we compare the earnings of employees at the top of each decile of the public-sector earnings distribution to the earnings of employees in the comparable place in the private-sector distribution. The data clearly support our expectation that the earnings of public-sector

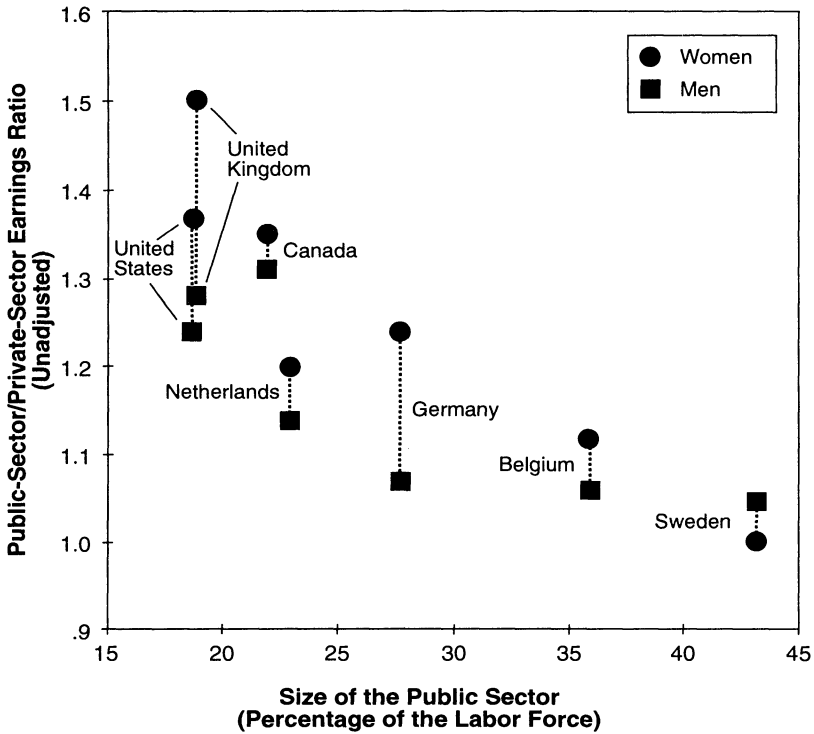


Figure 2. Public-Sector/Private-Sector Earnings Ratio by Gender and Size of the Public Sector: Adults from Seven Countries, Ages 18 to 64

Note: Includes adults in the full-time labor force only.

Source: Luxembourg Income Study.

workers are particularly favorable on the lower end of the earnings distribution. In the United States, for example, women working in the public sector, and earning at the tenth percentile, earned 1.60 times as much as those at the tenth percentile in the private sector; for women in the ninetieth earnings percentile, the public-sector/private-sector earnings ratio was only 1.14. The same pattern (larger public-sector pay premiums among lower earners) holds for men and women in every country except Belgium. As we noted earlier, one important implication of these findings is that if and when these and other welfare states shift toward public-sector wage restriction and/or downsizing, the effects will be felt most sharply by women (due to their overrepresentation in government employment), and especially, these results suggest, the lowest-earning women.

Table 3 also presents data on the extent of earnings dispersion—the 90 percentile/10 percentile earnings ratios—in the public and

private sectors. The results indicate that, as expected, earnings are more compressed in the public sector in all countries<sup>10</sup>—again with the exception of Belgium, where the reverse is true for both women and men. This finding of a narrower pay structure in the public sector explains the general pattern described above of larger pay premiums among the lower wage-earners.

Finally, as expected, when we look across the seven countries, the extent to which the pay advantage is concentrated at the bottom is greatest in countries having the largest public-sector/private-sector differential in earnings dispersion. The only surprise in

<sup>10</sup> Diagrams (not shown) indicate that the public earnings distributions, generally lie *within* the private distributions, with public-sector earnings neither falling as low nor rising as high as private-sector earnings. Note that in most countries, median private earnings begin to exceed median public earnings in the upper range of the top decile.

**Table 3. Unadjusted Public-Sector/Private-Sector Earnings Ratios by Earnings Percentile and Gender: Adults from Seven Countries, Ages 18 to 64**

Gender/ Earnings Percentile	Social Democratic	Conservative			Liberal		
	Sweden 1992	Belgium 1992	Germany 1989	Nether- lands 1991	Canada 1991	United Kingdom 1991	United States 1991
<b>WOMEN</b>							
<i>Earnings Percentile</i>							
10th	1.39	1.18	1.40	1.76	2.02	2.65	1.60
20th	1.18	1.08	1.46	1.54	1.71	2.68	1.47
30th	1.14	1.14	1.38	1.34	1.57	2.46	1.42
40th	1.09	1.11	1.28	1.21	1.44	2.06	1.49
50th	1.04	1.12	1.29	1.18	1.35	1.88	1.39
60th	1.02	1.12	1.22	1.21	1.33	1.79	1.31
70th	1.02	1.17	1.23	1.17	1.41	1.72	1.26
80th	.97	1.19	1.14	1.16	1.40	1.63	1.22
90th	.93	1.20	1.15	1.11	1.34	1.35	1.14
<i>Dispersion (90th Percentile/10th Percentile)</i>							
Public-sector	2.89	2.26	5.37	3.34	3.89	2.45	4.61
Private-sector	4.37	2.21	6.31	6.13	5.91	2.97	6.95
Public-sector/private-sector	.66	1.02	.85	.54	.66	.82	.66
<b>MEN</b>							
<i>Earnings Percentile</i>							
10th	1.10	1.01	2.09	1.33	2.30	1.50	1.71
20th	1.08	1.05	1.16	1.17	1.74	1.37	1.61
30th	1.04	1.06	1.09	1.12	1.48	1.31	1.47
40th	1.05	1.05	1.07	1.15	1.37	1.33	1.35
50th	1.05	1.11	1.10	1.42	1.31	1.28	1.24
60th	1.03	1.11	1.12	1.43	1.28	1.25	1.21
70th	1.03	1.09	1.12	1.14	1.24	1.20	1.12
80th	1.00	1.05	1.09	1.12	1.20	1.13	1.13
90th	1.00	1.10	1.02	1.05	1.09	1.05	1.04
<i>Dispersion (90th Percentile/10th Percentile)</i>							
Public-sector	2.83	2.66	2.59	2.44	2.82	2.96	4.14
Private-sector	3.12	2.43	5.42	3.07	5.94	3.39	7.12
Public-sector/private-sector	.91	1.09	.48	.79	.47	.87	.58

Note: Includes adults in the full-time labor force only.

Source: Luxembourg Income Study.

these results is that the public- versus private-sector difference in earnings dispersion was not consistently largest in the less regulated labor markets of the liberal countries.

#### ***Adjusted Public-Sector versus Private-Sector Wage Differentials: Question 3***

Do the attributes of public-sector workers or public-sector jobs explain the consistent

cross-national pattern of unadjusted public-sector earnings premiums? Are public-sector workers more educated than workers found in the private sector? Are they employed in a more favorable mix of occupations? Table 4 indicates that both women and men employed in the public sector are, as expected, significantly more educated than private-sector workers (i.e., they are more likely to have at least some post-secondary education). The



**Table 4. Education and Occupation by Gender and Employment Sector: Adults from Seven Countries, Ages 18 to 64**

Gender/Sector	Social Democratic	Conservative			Liberal		
	Sweden 1992	Belgium 1992	Germany 1989	Netherlands 1991	Canada 1991	United Kingdom 1991	United States 1991
<i>Percentage in High-Education Category</i>							
Women:							
Public-sector	41.2	48.6	70.6	42.5	73.7	64.7	66.9
Private-sector	17.1	36.9	62.2	15.4	52.0	36.8	48.6
Odds ratio	3.4	1.6	1.5	4.1	2.6	3.1	2.1
Men:							
Public-sector	45.9	32.7	85.5	31.5	69.4	54.9	67.7
Private-sector	17.0	26.0	75.2	16.8	52.9	30.4	47.8
Odds ratio	4.1	1.4	1.9	2.3	2.0	2.8	2.3
<i>Percentage in Professional Occupation Category</i>							
Women:							
Public-sector	57.8	—	49.8	63.9	59.9	87.0	52.1
Private-sector	17.7	—	12.5	37.7	33.3	24.0	28.3
Odds ratio	6.4	—	6.9	2.9	2.0	21.2	2.8
Men:							
Public-sector	45.3	—	36.2	54.5	49.5	60.3	43.5
Private-sector	11.9	—	18.7	35.5	28.6	35.4	25.5
Odds ratio	6.1	—	2.5	2.2	2.4	2.8	2.2

Note: Includes adults in the full-time labor force only.

Source: Luxembourg Income Study.

size of this sectoral differential is quite striking. The relative odds, for example, that public-sector female workers are highly educated exceeds 2.0 in five countries, and exceeds 3.0 in three countries. Thus, better educational credentials no doubt explains some of the higher earnings of public-sector workers for both women and men.

Likewise, Table 4 reveals that public-sector workers are, as expected, significantly more likely than their private-sector counterparts to be employed in professional, managerial, and technical positions. The public sector is home to a disproportionate share of "good" jobs for both women and men, as Kolberg (1991) suggests. Again, the public-versus private-sector earnings differentials are quite large. Among women, the odds of being in the professional, managerial, or technical occupational group are at least twice as great in the public sector in all seven countries; in the United Kingdom, publicly employed women are 20 times more likely than privately employed women to be in this

occupational group. While the public-sector occupational advantage is also evident for men, it is greater for women than for men in all countries examined.

Is the unadjusted public-sector earnings premium due entirely to the higher educational credentials and more favorable occupational positions of public-sector employees? In other words, is there a wage advantage associated with public-sector employment once relevant individual-level differences are taken into account? Table 5 summarizes the results of regression estimates of the public-sector/private-sector wage differential (full results are available from the authors). The dependent variable is logged annual earnings. In Model 1, we estimate the unadjusted ("gross") effects of public-sector employment on wages for men and women separately. We present Model 1 results (which are based on mean log earnings) so that they can be compared with the multivariate results in Model 2. These estimated premiums differ slightly from the earnings

**Table 5. Coefficients from the Regression of Annual Earnings (log) on Public Sector Employment: Adults from Seven Countries, Ages 18 to 64**

Gender/Model	Social Democratic	Conservative			Liberal		
	Sweden 1992	Belgium 1992	Germany 1989	Netherlands 1991	Canada 1991	United Kingdom 1991	United States 1991
<i>Women</i>							
Model 1: Gross effect	.052* (.026)	.154* (.025)	.147* (.055)	.285* (.074)	.404* (.021)	.342* (.026)	.332* (.025)
Model 2: Net effect (with selection correction and controls) <sup>a</sup>	-.085* (.026)	.018 (.022)	-.015 (.051)	.080 (.068)	.210* (.020)	.053 (.028)	.075* (.023)
<i>Men</i>							
Model 1: Gross effect	.047* (.018)	.051* (.021)	.166* (.034)	.137* (.031)	.307* (.018)	.193* (.027)	.238* (.026)
Model 2: Net effect (with selection correction and controls) <sup>a</sup>	-.152* (.017)	-.062* (.018)	-.034 (.027)	-.030 (.027)	.141* (.016)	.035 (.023)	.021 (.022)

*Note:* Numbers in parentheses are standard errors. Model 1 is an OLS model; Model 2 is a multivariate model. Includes adults in the full-time labor force only.

*Source:* Luxembourg Income Study.

<sup>a</sup> Controls are added for individual-level differences in weekly hours worked, age, age-squared, education, and occupation.

\* $p < .05$

premiums based on medians presented in Table 2, but overall the two sets of unadjusted premium results are clearly consistent.

In Model 2, we include individual-level control variables—hours worked, age and age-squared, and the education and occupation dummy variables—to estimate an adjusted hourly wage differential. Overall, Model 2 results indicate that in all countries examined and for both women and men, a sizable portion of the unadjusted premium (and in several cases, the entire unadjusted premium) is explained by sectoral differences in worker-related and job-related characteristics. For women, public-sector pay premiums remain in only two liberal regime countries—Canada and the United States (approximately 21 percent and 8 percent, respectively)—and a public-sector *penalty* is found in the social democratic case—Sweden (approximately 9 percent). Adjusted public-sector/private-sector wage differences are not significant in the other countries.<sup>11</sup>

The Model 2 results for men are similar, although their adjusted public-sector/private-sector wage differentials are generally less favorable than are women's (i.e., the premiums are smaller; the penalties are larger). In Canada, government-employed men, all else equal, receive a pay advantage of approximately 14 percent (not as large as Canadian women's), while in the United States, male government workers do not show the adjusted pay advantage that is reported by their female counterparts. Similarly, Swedish men face an adjusted public-sector pay penalty twice the magnitude of their female counterparts'; Belgian men, like the Swedish men, face a public-sector pay disadvantage. Overall, for both women and men, sectoral differences in the composition of workers and occupations explain a major share of the unadjusted premiums in the liberal countries; in the conservative and social democratic cases,

private pay differentials. On the other hand, we also were unable to measure fringe benefits, which often are higher in the public sector. We suspect that these two omissions may cancel each other out, but further research is clearly in order.

<sup>11</sup> Our reliance on cross-sectional data prohibits controlling for unmeasured worker characteristics, which might reduce the apparent public/

**Table 6. Decomposition of Gender Gap in Wages: Adults from Seven Countries, Ages 18 to 64**

Gender/Model	Social Democratic	Conservative			Liberal		
	Sweden 1992	Belgium 1992	Germany 1989	Nether- lands 1991	Canada 1991	United Kingdom 1991	United States 1991
<i>Unadjusted Female/Male Earnings Ratios</i>							
Public-sector ratio	.80	.82	.72	.72	.72	.78	.74
Private-sector ratio	.80	.80	.62	.70	.70	.66	.67
Difference	.00	.02	.10	.02	.02	.12	.07
<i>Decomposition of Gender Wage Gaps (Dependent Variable = log Annual Earnings)</i>							
Difference in log earnings	.370	.240	.430	.460	.420	.370	.360
Amount of difference due to:							
Differences in means							
Public sector	.052	.005	.003	.000	-.011	-.004	-.001
As percentage of gender gap in wages	14.0	2.1	.6	.1	-2.7	-1.0	-.3
Differences in effects							
Public sector	-.016	-.022	-.004	-.022	-.015	-.002	-.009
As percentage of gender gap in wages	-4.3	-9.3	-.9	-4.8	-3.5	-.6	-2.4

Note: Includes adults in the full-time labor force only.

Source: Luxembourg Income Study.

compositional differences explain all of the observed public-pay premiums.

#### **Public Employment and the Gender Gap in Wages: Question 4**

In the final analyses, we shift the focus from public-sector/private-sector pay differentials to gender pay differentials. Here, we assess the effect of public-sector employment—its extent and its pay structure—on the gender earnings gap. The top panel of Table 6 presents sectoral differences in *unadjusted* female/male earnings ratios. The results confirm that, as expected, the female/male earnings ratios are (significantly) higher in the public sector in all countries; Sweden, where there is no difference, is an exception. The narrower gender earnings gaps in the public sector are likely due to a combination, in the public sectors, of a more favorable educational/occupational mix and a more compressed wage distribution.<sup>12</sup>

<sup>12</sup> We compared the unadjusted public-sector/private-sector pay differentials reported in Table 6 to those reported by Rosenfeld and Kalleberg

What is the effect of public-sector employment on the gender gap in wages, and how does the effect vary across countries? To answer this question, we explore various counterfactual scenarios. One simple thought experiment is to imagine that all public-sector employment vanishes, in which case the overall gender earnings gap would equal that found in the private sector. As our results in the top panel of Table 6 indicate, this would inflate the gender differential in earnings in all countries studied, except Sweden.

Another way of assessing the impact of the public sector on the female/male wage ratio is to focus on the contribution of the public

(1991), whose results are based on Wright's Comparative Class Structure data (see Wright et al. 1995, for a description of the data). The gender differentials reported in the two studies are in the same direction and of the same approximate magnitude, which provides a useful external measure of the validity of our results. The only substantial difference between the two studies is with respect to Germany, where the LIS data indicate a larger public/private pay difference in the gender gap (.10) than that reported by Rosenfeld and Kalleberg (.02).

sector (i.e., the contribution of gender differences in means—public employment rates—and gender differences in effects—returns to public employment) to the gender wage gap. The bottom panel of Table 6 presents a standard decomposition analysis of the impact of government employment on the gender gap in wages.<sup>13</sup>

First, we consider the contribution of the gender difference in public-sector employment rates net of occupation and individual-level differences, to the gender difference in logged earnings. In essence, this examines what would happen if the educational/occupational distribution and the pay structure were to remain, and women were employed in the public sector in the same proportions as men. With the exception of Sweden, where female overrepresentation is so high, the effect on the gender pay gap of removing the gender differential in public-sector employment rates would be quite small in most of the countries studied. In the liberal countries, eliminating women's overrepresentation in the public sector would increase the gender wage gap, although the magnitude of the difference would be quite modest. If women were no longer overrepresented in the public sector, the gender gap in wages would be 2.7 percent larger in Canada, and .3 percent larger in the United States. The small magnitude of these effects is somewhat counterintuitive, given that the adjusted public pay premiums in Canada and the United States are substantial for women. The effect on the gender wage gap is attenuated, however, because men receive public pay premiums as well and because these public sectors are relatively small.

In contrast, if Swedish women's public-sector employment rates were reduced to the men's rates, the gender gap in wages would be *reduced* by 14 percent. This is because adjusted public-sector wages in Sweden are lower than those in the private sector. Thus, Swedish women's concentration in this low-paying sector, all else equal, accounts for a considerable portion of the gender gap in wages. As in Sweden, the gender difference

in public-sector rates in the conservative countries explains a portion of the gender wage gap, although the contribution is very small. This is because the adjusted public-sector wage effect is not significantly different from zero in these countries; and in the Dutch case, women also are only slightly overrepresented in public employment. Overall, women's concentration in the public sector is most advantageous to women's wages in the liberal countries, and least advantageous in the social democratic countries.

This conclusion is somewhat modified when we examine the differences in effects in Table 6. This analysis addresses the contribution to the gender wage gap of gender differences in public-sector wages. As was seen in Table 5, the adjusted public-sector effect on wages tended to be more positive for women than for men. Thus, assigning men's public-sector wages coefficients to women working in the public sector would *increase* the gender wage gap (i.e., women benefit from relatively favorable adjusted wages in the public sector). Assigning to women men's returns to public employment would worsen the gender wage gap in all countries studied, including Sweden, although the size of the effect varies, from 9.3 percent of the gender earnings gap in Belgium to a low of .6 percent in the United Kingdom.

Taken together, in the liberal countries, gender differences in public-sector employment rates ("means") and in returns ("effects") modestly increase gender wage equality. In other words, women benefit from their higher public-sector employment rates and from their higher (adjusted) wages in the public sector, compared to women in the private sector and to their male counterparts in the public sector. In the conservative countries, the contributions of "means" and "effects" tend to work in opposite directions. In Belgium, where men but not women face an adjusted public-sector wage penalty, the overall effects of differential returns to public employment serve to increase gender wage equality (i.e., the gender gap is reduced by approximately 7 percent). In Sweden, the gender gap in wages is increased by about 10 percent from the combined effects of extreme female overrepresentation in the public sector and the lower (adjusted) wages

<sup>13</sup> This decomposition is based on the regression results from OLS Model 2. The full regression and decomposition results are available from the first author.

paid to women in that sector. The effects of the public-sector wage penalty on the overall gender wage gap is actually lessened by the fact that women's public-sector wage penalty is smaller than men's.

## DISCUSSION

Our results modify conclusions that others have reached regarding women and public-sector employment. First, these findings constitute a partial challenge to Kolberg (1991), who studied welfare state employment in social democratic countries and popularized the claim that public employment is "good" for women. Our results support Kolberg's in that we find that the public sectors in these welfare states do offer more professional, managerial, and technical jobs than do the private sectors, and in many countries there are substantial (unadjusted) public-sector pay advantages. Our results challenge Kolberg's, however, in that these pay advantages are not universally found; surprisingly, the (unadjusted) public pay advantage is particularly modest in Sweden, our one social democratic case. Furthermore, in most countries we studied, once compositional differences are controlled the public-sector pay advantages disappear, and in Sweden both women and men receive a public-sector pay *penalty*. These results suggest that some reservations are in order vis-à-vis the claim by Kolberg (1991) and others that public employment has improved women's economic status across the industrialized labor markets.

Our findings also contribute to the literatures on public-sector/private-sector wage differentials and on the gender earnings gap. With respect to the former, our use of comparable micro data across a range of countries allows us to isolate and assess the impact of public employment on earnings. Consequently, we are able to show that standard arguments offered for public-sector wage premiums must be augmented to recognize the existence of cross-national variability. We argue that a major factor underlying cross-national variation is the size of the public sector. We contend that countries with large public sectors face greater fiscal pressures, and in response they attenuate public-sector pay advantages. We recognize, however, that it is impossible with a sample of

seven countries to pinpoint that the causal mechanism underlying variation in the pay premiums is public-sector size. Policy packages, operating as integrated wholes, tend to vary across the three regime types, and it is not possible to vary government size *within* regime types to fully test the independent effect of public-sector size. In the future, data from more countries and/or more points in time will allow us to reach a firmer conclusion about what exactly underlies the inter-country variation in the effects of public employment.

We also contribute to the empirical literature on the gender wage gap. Our findings indicate that cross-national variation in public employment, both its extent and its pay structure, does not constitute a substantial explanation for variation across countries in gender earnings equality. Furthermore, to our surprise, our findings revealed that in Sweden, which in our sample represents the social democratic countries, gender-differentiated patterns of public employment actually *decrease* gender equality in pay. In Sweden, public-sector jobs have the greatest potential of benefiting women because women are highly concentrated in Sweden's large public sector. The irony is that the low relative wages of public-sector employees in Sweden creates a negative impact on women's overall earnings status relative to men, rather than exerting the positive effect that might have been expected.

Future research is needed on the effects of public employment on overall pay structures and on gender equality. Again, research based on a larger set of countries, and eventually on cross-nationally comparable panel and time-series data, will enable us to make firmer generalizations about the nature of government as employer and about the variability across countries in the effects of public-sector employment on gender equality.

In addition, our results and analyses have implications for future analyses of welfare states and gender equality. Our results indicate that Esping-Andersen's (1990) regime types do capture important distinctions among contemporary welfare states. The size of the public sector, the extent of the public-sector earnings premium, and the impact of the public sector on gender differentials in wages all vary more across regime types than

within them. We have explored only one feature of welfare states, public-sector employment, as it affects women's and men's wages, and the gender pay gap, and there are other important aspects of welfare state policy that shape gender equality. Whether other factors cluster as neatly into social democratic, conservative, and liberal regime types remains an issue for future research.

Finally, as the post-industrial transformation continues, welfare state retrenchment and public-sector restructuring are widely anticipated and, in some countries, already underway. Clayton and Pontusson (1997) report reductions since 1990 in public-sector employment in several countries, including Denmark, Finland, Germany, Sweden, and most markedly, the United Kingdom. However, the impact of this downsizing on public-sector earnings across countries has not yet been systematically examined (on the U.S. case, see Katz and Krueger 1991). It is likely that fiscal pressures in many industrialized countries will lead to reductions in public-sector employment, lower public-sector pay, or both. It remains to be seen how these dual trends will unfold and interact, and what their consequences will be.

As women are overrepresented in the public sectors of the industrialized countries, any effects of public-sector restructuring (e.g., both downsizing and wage restraint) will likely be felt most sharply by women. Moreover, as our results indicate, (unadjusted) public-sector pay advantages are heavily concentrated on the low end of the earnings spectrum. Thus, as public-sector restructuring continues, the consequences may be most serious for women and other workers with low earnings. All told, as we move into the next century welfare state employment is unlikely to promote women's economic advancement. Social policy affecting women's overall employment (Gornick et al. 1998) and government policy that influences the structure of wages throughout the economy (Blau and Kahn 1992) are probably more promising avenues for promoting labor market advances for women.

*Janet C. Gornick is currently Assistant Professor of Political Science at Baruch College, part of the City University of New York (CUNY). Her research is primarily cross-national, and focuses on the effects of social and labor market policies*

*on women's economic outcomes. She is particularly interested in the roots and consequences of women's engagement in gender-segregated, part-time, and intermittent work. Recent articles have appeared in The Journal of European Social Policy, Social Science Quarterly, and Work, Employment, and Society.*

*Jerry A. Jacobs is Professor of Sociology at the University of Pennsylvania. He has studied a number of aspects of women's employment, including authority, earnings, working conditions, part-time work, and entry into male-dominated occupations. His current research projects include a study of women in higher education, funded by the Spencer Foundation, and a study of working time and work-family conflict, funded by the Sloan Foundation.*

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