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Gender, the Welfare State, and Public Employment: A Comparative Study of Seven Industrialized Countries

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# Gender, The Welfare State, and Public Employment:

# **A Comparative Study of Seven Industrialized Countries**

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#### **Abstract**

This paper explores the influence of government employment on the gender gap in earnings in seven countries, using data from the Luxembourg Income Study (LIS). We raise and answer four questions about 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) Finally, what is the effect of public employment -- its extent and its pay structure -- on gender gaps in earnings? The results indicate marked variation across liberal, conservative, and social democratic welfare states, but reveal a number of uniformities as well. We find that public-sector workers earn more, on average, than those working in the private sector in most countries in our sample, and most earnings advantages are concentrated on the lower end of the earnings distribution. Generally, a large share of the public/private earnings differential -- especially in the social democratic and conservative countries -- is explained by sectoral differences in worker characteristics and occupation. The effect of public employment on the overall gender gap in earnings is limited in most countries. We discuss the implications of these results for theory and research on gender and the welfare state.

#### INTRODUCTION

Public sector growth has been an important factor in women's integration into the labor markets in 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 over-represented among public employees in most industrialized countries, most markedly in the Nordic countries (OECD 1994). Some welfare state scholars have argued that public employment has not only increased female participation rates, but that it has also constituted a crucial source of especially "good jobs" for women. For example, Kolberg (1991) argues that welfare state employment 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 well-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.

Questions concerning the effects of public employment on women's wellbeing are also intertwined with a broader set of questions concerning the effects on women of welfare state features more 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 analyses of the welfare state up through the 1980s -- including studies of welfare state employment -- have been too narrowly class-based and have paid insufficient attention to gender relations (Orloff 1993, 1996; Sainsbury 1994; O'Connor 1993).

A first generation of feminist analyses focused on identifying universal welfare state features, generally those that were detrimental to women's interests (see Orloff 1996 for a review), rather than exploring variation in the gendered effects of public policies across countries. Thus, the early feminist work on the welfare state was not comparative in focus. 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 more "woman-friendly," to use Hernes' (1987) term, than others. 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 sharply comparative turn in the early 1990s as feminists criticized Esping-Andersen's (1990) *Three Worlds of Welfare Capitalism*. 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 socio-economic outcomes and employment patterns. Feminist scholars criticized Esping-Andersen's neglect of gender in the construction of the 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 criticized and responded to Esping-Andersen's inattention to women, they maintained both the focus on welfare state outcomes and, for the most part, the use of clusters of like countries as a framework for comparative analysis.

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 remain focused on the theoretical difficulties in applying welfare state formulations to gender issues (Williams 1995; Orloff 1996; O'Connor 1993). 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 comparative only implicitly. 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, Meyers, and Ross 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.

In this paper, 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 (Meyer 1994; Kolberg 1991). Comparative analyses have examined effects of the public sector on women's employment levels (Schmidt 1993; OECD 1982). 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 element of the quality of employment that varies across countries — along with, e.g., occupational benefits, flexibility in working time, promotion opportunities, and authority (see, e.g., 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 non-cash remuneration and other job attributes.

Here, we ask a series of questions, seeking answers about both 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) Finally, 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 here 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.

In the following section, we situate our analysis in the growing literatures on the welfare state and women's employment, including the literature on women and public employment.

Next, we discuss welfare state regime types and their potential applicability to studying variation in public-sector employment, and we elaborate these four research questions and our expectations about the varying impact, across countries, of public-sector employment on women.

Data and methods, results, and conclusions follow.

#### THE GENDERED WELFARE STATE AND WOMEN'S EMPLOYMENT

# The Welfare State and Women's Employment

Feminist critics of mainstream welfare state theory have criticized the notion 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. They argue that this concept applies poorly to women's social circumstances and needs (O'Connor 1993; Orloff 1993). These critics have countered 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. These and other feminist critics argue that 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 shaping up in the literature is that *configurations of social policies*, rather than single policies, shape women's employment outcomes.

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 female employment levels. He argued that women's employment rates would be highest in the social democratic countries (primarily the Nordic countries), where both supply and demand are

<sup>&</sup>lt;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 -- "it 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 by promoting gender equality in the labor market in the short term.

increased by the extensive provision of public services. Moderate levels of female employment were predicted 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 be expected in the conservative countries (i.e., continental Europe), as a result of a slow-growth service sector and policies that encourage mothers to remain in the home.

Several researchers have established this employment pattern empirically (OECD 1994; Gornick 1998; authors' results); 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, compared to 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 in the liberal countries are further explained by tight links in these countries between employment status and a range of non-cash benefits (Gornick 1998), links that are often described as "workforcing".<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 (Castles

<sup>&</sup>lt;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 anti-discrimination apparatus has clearly opened doors for women, in particular, by de-segregating some occupations, and reducing barriers to women's upward advancement. Moderately high levels of female employment in the U.S. likely result from both sets of forces.

forthcoming), tax code features (Gustafsson 1991), and a historical reliance on immigrant workers (Gustafsson 1994).

The literature on policy explanations for cross-national variation in gender earnings gaps which tend to be narrowest in the social democratic countries (Gornick 1998; Kolberg 1991;
Rosenfeld and Kalleberg 1991) -- is more limited. In an influential paper, Blau and Kahn (1992)
reported that a considerable amount of cross-national variation in gender gaps is explained by
overall earnings inequality; in countries with a more compressed earnings distribution, 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 serve to narrow the overall earnings distribution -such as policies that support unions and/or the presence of centralized wage-setting institutions -will, by implication, narrow gender earnings gaps. Indeed, Whitehouse (1992) reports a strong
positive relationship between centralization of wage-setting and the gender earnings ratio;
Rosenfeld and Kalleberg (1991) report that more corporatist countries have higher gender
earnings equality. Interestingly, policies aimed specifically at women -- including elements of
family policy (Rosenfeld and Kalleberg 1991) and equal pay/opportunity legislation (Whitehouse
1992) -- seem to have little to no independent effect on the magnitude of gender pay gaps.

# Women and Public Employment

High levels of public employment, both across countries and over time, have been positively associated with 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: "rising 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).

Kolberg (1991) is most associated with the claim 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 wage ratio than 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 (e.g., Dahlerup 1987) who describe the state's relationship to women largely as one of patriarchal social control. 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. However, his study is limited by the narrow range of countries considered and the near absence of data on sectoral differences on earnings.

The effect of public sector employment on gender equality in earnings has received limited attention in cross-national research. In a study of nine industrialized 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 all countries except Sweden (see our Table 6). In a pooled time-series 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 is reported here.

# RESEARCH QUESTIONS AND EXPECTATIONS

## The Comparative Framework: Country Clusters

Largely due to Esping-Andersen's influence, it is now commonplace for comparative welfare state scholars 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 (and which are represented by Sweden in our analysis); the conservative (or corporatist) welfare states, which are dominated by the continental European countries (and represented here by Belgium, Germany, and the Netherlands)<sup>3</sup>; and the liberal (or residual) welfare states (which include, here, 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; and in the liberal countries, entitlements derive primarily from assessments of individual need.

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

We use the Esping-Andersen clusters as an organizing framework for our empirical analysis, although we have two reservations. Our first reservation concerns the degree to which, within countries, policies affecting women do, in fact, constitute a distinct and coherent package of policies. State policies are often ambivalent or contradictory with respect 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 women's roles. This perspective recognizes that certain elements of a country's welfare state package may serve to reinforce gender equality and women's autonomy, while other features may ameliorate it (Orloff 1993). Thus, the distinctive feature of Esping-Andersen's approach --- namely, the analysis of an integrated policy package rather than selected elements -- may be less applicable in the case of gender than it has proven to be with respect to class.

Our second reservation concerns whether gender effects actually cluster together into the three distinct "regime types" that Esping-Andersen has proposed. A small body of empirical work has challenged the Esping-Andersen model by focusing on variation *within clusters* 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; Leira 1992; Sainsbury 1996; Bussemaker and van Kersbergen 1996).<sup>4</sup>

Despite these concerns, we use Esping-Andersen's clusters as a framework for our analysis. First, there is reason to believe that welfare state employment patterns will vary in

<sup>&</sup>lt;sup>4</sup> This heterogeneity occurs because some conservative exemplars, such as France, provide extensive employment supports for mothers while others, such as Germany, do not (Gornick, Meyers, and Ross 1998).

accordance with these welfare state clusters because the size of the welfare state is shaped by, and shapes, the extent of service provision. The size, and thus potential impact, of the welfare state as employer thus should be related to its position in the regime cluster matrix. Second, we use the clusters as a starting point because recent empirical work (e.g., Gornick, Meyers, and Ross 1997; Siaroff 1994) suggests that the Esping-Andersen clustering turns 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 the influence of these factors. The 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 differences 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.

## Questions and Expectations

In this section, we lay out the series of questions that shape the empirical analysis of the relationship between public sector employment and women's earnings. Each of our questions concern expectations of cross-national commonality in aspects of public employment, as well as expectations of cross-national variation within those patterns.

First, do average unadjusted public sector earnings exceed private sector earnings in all countries? And, 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-countries studies. In the United States, a sizable literature exists on public/private wage differentials, both unadjusted and adjusted.<sup>5</sup>

Nearly all 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 find an *adjusted* premium as well (see Moulton 1990 for a review; see also Belman and Heywood 1995; Poterba and Rueben 1994). Few researchers have explored the public/private earnings gap in 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 public sectors are expected to pay more is that the nature of the work -- primarily, a combination of service delivery and regulation -- necessitates hiring a more educated workforce and offering a more favorable mix of occupations (Rose 1985). However, there are a range of other intertwined factors that push pay upwards in the public sector -- in all

<sup>&</sup>lt;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 LIS data, we use the term "earnings" to refer to "annual earnings," which includes monetary compensation for work but not fringe benefits. We use the term "wages" to refer to hourly wages, that is, earnings per hour.

likelihood, both across and within educational and occupational groupings. First, many government managers are elected, and elected officials are alleged to be more interested in their re-election than in cost-minimizing administration. Thus, it is argued, political forces will lead public managers to devise policy packages with "highly concentrated and visible benefits [such as high wages for state employees] but hidden and dispersed costs" (Heywood 1991:418).

Second, high public-sector wages have also been attributed to the higher levels of unionization among public-sector workers (Belman and Heywood 1991; Rose 1985). Third, the "greater scope for regulation of working conditions in public employment, and the lower degree of exposure to market pressures" (Whitehouse 1992) would be expected to raise the floor on the bottom end of the public pay scale. These and other arguments hold that a public-sector wage premium should be a general feature of government employment.

However, we also expect 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/private 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.

Discussions of fiscal pressures on the public sector are not new. 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 compared with manufacturing. 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. The public-

sector deficits in the U.S. have been a prominent political issue throughout this period. In Europe, high unemployment and the monetary requirements of joining the European Union have been powerful pressures favoring fiscal austerity on the part of governments.

These pressures have resulted in a leveling of public-sector employment and a reduction in the earnings of public-sector workers (Pedersen et al 1990; OECD 1994). Thus, 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 North-European countries.

An alternative possibility is that public sectors will pay less because they are highly "feminized". More than a decade of research has explored the contours and consequences of gender segregation in the workplace (see Reskin 1993). 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. This literature would lead to the expectation that public sector jobs may pay less in those countries where the public sectors have the highest concentrations of women workers.

Second, is the earnings advantage for public sector employees concentrated at the low end of the earnings distribution, in all countries? And, does this pattern vary systematically across countries? Specifically, 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 premiums to be concentrated at the low end of the earnings distribution in all countries, as a result of our related expectation -- that 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 lower end of the earnings distribution. In other words, we expect the public earnings distributions, in general, to lie "within" the private distributions, with public-sector earnings neither falling as low nor rising as high as private-sector earnings.

These inter-related expectations -- of greater public premiums at the bottom, and more compressed wages in the public sectors -- are also based on piecemeal prior research; again, systematic cross-national studies are not available. In the U.S., 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, and that during the 1980s there were more applicants for blue-collar than white-collar jobs in the Federal Civil Service. Poterba and Reuben (1994) report a net public-sector wage premium at the lowest salary levels and the reverse at higher salary levels (see also 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 -- the pay advantages concentrated at the bottom -- to be strongest in the less regulated labor markets of the liberal countries, and weaker in the more regulated social democratic labor market. Our expectation is that in the liberal countries, private wages will be more dispersed in relation to public pay; that predicts a pattern of more graded public/private pay differentials, with larger differentials on the low end of the distribution, in those countries.

Third, to what extent are the public/private earnings differentials explained by sectoral differences in worker characteristics and occupation? And, does the cross-national variation in adjusted premiums 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; however, we expect that controlling for these factors will not eliminate all public/private pay differentials. As noted earlier, we posit several intertwined factors that contribute to the public pay premiums -- e.g., political forces in public management, union wage effects, and insulation from market forces -- and these are expected to push public pay upwards, 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 premiums as for the unadjusted: they will be smallest in the social democratic case and largest in the liberal countries.

Fourth, what is the effect of public employment -- its extent and its pay structure -- on gender earning gaps? And, how variable is the effect of public employment on the gender earnings gap?

A number of studies, mostly single-country studies, find that the gender gap in earnings is smaller in public than in private employment (Rosenfeld and Kalleberg 1991; Freeman 1987). 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 of the public sectors should also lead to the result of 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 countries —
its extent and its pay structure — will be to narrow the gender earnings 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 public-sector employment and earnings 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 earnings gap remains an open question.

#### DATA AND METHODS

#### Data

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

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

The initial sample selected, in each country, included all working-age adults -- aged 18-64 -- 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.

<sup>&</sup>lt;sup>6</sup> The datasets are abbreviated in the tables and figures by two-letter country codes followed by the year: Sweden (SW92), Belgium (BE92), Germany (GE89), Netherlands (NL91), Canada (CN91), the United Kingdom (UK91), and the United States (US91).

Employed individuals were then coded as employed in either the public or the private sector. Individuals were further 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. First, we compare, across countries, overall employment and public-sector employment rates by gender. Second, limiting the sample to full-time workers, we calculate and compare median annual earnings by sector and by gender, in each country, in order to assess cross-national variation in gross (unadjusted) public/private earnings differentials. Third, we present earnings of public and private workers for each earnings decile, so that we can assess variability in the public/private differential throughout the earnings distribution. Fourth, we calculate the ratio of the annual earnings of the 90th percentile earner to the 10th percentile earner. This inequality measure has the virtue of being insensitive to data errors and outliers in the extremes of the wage distribution.

Fifth, for each country, we calculate and compare unadjusted female/male earnings ratios by sector. Sixth, in order to estimate the regression-adjusted effects of public-sector employment on annual earnings -- net of differences in productivity- and job-related variables -- we construct

<sup>&</sup>lt;sup>7</sup> The coding scheme is available from the authors.

standard semi-log wage equations, identically-specified across countries. We estimate the parameters of the wage equations for women and men separately, using ordinary least squares (OLS) regression; the dependent variable is logged annual earnings. Independent variables include weekly hours, age and its square, education, occupational group, and a dummy variable indicating public-sector employment. Thus, our basic approach, drawing on techniques widely used 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 the standard estimation problem that we have observed earnings only for those persons who are employed; this presents a selection problem, which can result in biased parameter estimates. We resolve this by using a two-stage estimation procedure. In the first stage, we use logistic regressions to model the probability that persons are employed; following labor supply theory, the independent variables include the number and age of children, marital status, own 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>8</sup>

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

<sup>&</sup>lt;sup>8</sup> A selection correction for full-time employment -- rather than all employment -- produced nearly the same results.

We group countries into three clusters of the Esping-Andersen's typology. In our sample of seven countries, we have only one social democratic case (Sweden), along with three conservative cases (Belgium, Germany, and the Netherlands), and three liberal welfare states (Canada, the U.K., and the U.S.). 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.

Finally, a note on part-time work is necessary. 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 all of the subsequent earnings analyses. We included them in this initial section because its purpose is to provide background on overall, and public sector, employment patterns. 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 these countries 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. Third, data on actual hours worked *among* part-time workers, especially those with the fewest hours, tend to be

<sup>&</sup>lt;sup>9</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 1998). The policy determinants underlying the cross-national variation in part-time work are only sketchily understood, although this question is receiving a lot of attention now (see Castles forthcoming).

suspect in survey data. That makes estimating the hourly wages of "short-hour" workers difficult; the analyses in the paper on adjusted public sector effects require accurate data on hours worked for all included workers.

## RESULTS

# Background: Employment and Public Employment

Table 1 and Figure 1 set the context for the earnings analysis that follows by presenting cross-national employment rates, and public sector shares, for women and men. *Countries are organized by welfare state regime type*. These results indicate, 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 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 U.K., and the U.S.), and higher (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.

#### [TABLE 1 ABOUT HERE]

# [FIGURE 1 ABOUT HERE]

Second, the LIS data confirm that the size of the public sector (public employment as a share of total employment) varies considerably across countries. The cross-national ordering is also consistent with the welfare state regime characteristics: the highest overall levels of public-sector employment are in the high-service social democratic case (42 percent), followed by the

conservative countries (21 to 34 percent)<sup>10</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 to 20 percent).

Third, these two sets of results, taken together, indicate that the relationship between the size of the public sector and women's employment levels (absolute or relative) is not straightforward. 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 may have high female employment rates as well, as is the case in the United States and other liberal welfare states. This is consistent with Esping-Andersen's claim that social democracies exhibit high female employment rates by pulling women into the labor market, while liberal regimes with minimalist welfare states tend, at least to some extent, to push women into employment by restricting the income options outside of paid work. 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 of the seven countries studied. Women are (significantly) over-represented among public sector workers in all countries, although the magnitude of that over-representation varies widely. Sweden has the

The Netherlands' borderline placement here is not surprising, in that the Dutch welfare state, while much more developed than those in the liberal 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.

There is a modest (but not statistically significant) relationship between the size of the public sector and women's share of employment (r=.21, p<.65).

highest overall public employment and also the highest degree of female over-representation; 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.<sup>12</sup>

Odds-ratios (not shown) indicates that women are 5 times as likely as men to be employed in the public sector in Sweden. The relative concentration of women workers in government employment is more modest in the conservative and liberal countries, with the female/male (public employment) odds ratios ranging from 1.2 in the Netherlands to 1.7 in Belgium. Clearly, the social democracies, as represented by Sweden, have the highest relative concentration of women in the public sector. However, there is no clear difference between the conservative and liberal countries.

# Unadjusted Public/Private Earnings Differentials (Question 1)

Table 2 presents unadjusted public/private earnings differentials, by gender, for full-time workers.<sup>13</sup> As expected, both men and women earn (significantly) more in the public sector in all countries, in all regime types. Furthermore, the public/private pay differential is greater for women than for men in all countries, with the notable exception of Sweden (see Figure 2), where they are nearly the same.

## [TABLE 2 ABOUT HERE]

## [FIGURE 2 ABOUT HERE]

The results also indicate that the magnitude of the public earnings premium varies widely across countries -- with a clear pattern of small premiums in the social democratic case, moderate premiums in the conservative countries, and larger premiums in the liberal countries. Among women, public/private 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/private ratios range from, again, a modest 1.05 in Sweden to between 1.24 and 1.31 in the liberal countries.

What explains the cross-national variability in public pay premiums? 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 the (unadjusted) public-sector earnings premiums against the size of the public sector (i.e., public employment as a share of total employment). Overall, Figure 2 indicates that the public-sector premium declines as the size of the public sector

Table 2 (and all subsequent tables and figures) include full-time workers only. Note that we conducted all of our analyses on full-time workers who worked full-year as well -- in the five countries in which we were able to do so -- and found that the results were quite similar to those for all full-time workers. We consequently report results only for the latter, as that allowed the inclusion of more countries in the study.

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

It is notable that the results presented in Figure 2 are not supportive of either of two alternative explanations. First, one possibility is that variation across countries in levels of earnings dispersion might explain variation in the public sector premiums, with the premiums rising as dispersion increases. However, the correlation between the degree of earnings dispersion and the magnitude of the public sector premium is positive but not significant for either women (.198) or men (.509). Likewise, the results do not support the explanation that public sector wage 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 premium is sizeable but 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 a 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 discussed 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 the public/private earnings ratio by decile, for both women and men; in each country, we compare the earnings of the employee in each decile of the public-sector earnings distribution to the earnings of the employee in the comparable decile of the private-sector distribution. The data clearly support our expectation that the earnings of public sector workers are particularly favorable at the lower rungs of the earnings distribution. In the U.S., for example, women working in the public sector in the bottom earnings decile earned 1.60 times as much as those in the bottom decile of the private sector; for women in the top earnings decile, the public/private ratio was only 1.14. The same pattern -- larger public- sector pay premiums among lower earners -- holds for men and women in each country, with the sole exception of Belgium. As we noted earlier, one crucial 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 in many countries will be felt most sharply by women (due to their over-representation in government employment) -- and especially, these results suggest, by the lowest-earning women.

Table 3 also presents data on the extent of earnings dispersion -- the 90/10 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>14</sup> -- again with the exception of Belgium, where the reverse is true for both women and men. This finding, the narrower public pay structure, explains the general pattern described above, i.e., that larger pay premiums are found among the lower earners.

<sup>&</sup>lt;sup>14</sup> Diagrams (not shown) indicate that the public earnings distributions, in general, lie "within" the private distributions, with public-sector earnings neither falling as low nor rising as high as private-sector earnings.

Finally, as expected, when we look across countries, the *extent to which the pay advantage is concentrated at the bottom* is greatest in countries with the largest public/private differential in earnings dispersion. The only surprise in these results is that the public/private difference in earnings dispersion was not consistently largest in the less regulated labor markets of the liberal countries.

# Adjusted Public/Private Earnings Differentials (Question 3)

Do the attributes of public sector workers or jobs explain the cross-nationally consistent pattern of unadjusted public-sector pay premiums? Are public-sector workers more educated than those found in the private sector? Are they employed in a more favorable mix of occupations? Table 4 indicates, first, 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 size of this sectoral differential was quite striking. The relative odds, for example, that public-sector female workers were highly educated exceeds two in five countries, and exceeds three in three countries. Greater educational credentials will no doubt explain some of the higher earnings of public-sector workers, for both women and men.

## [TABLE 4 ABOUT HERE]

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/private differentials were 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 of the seven countries; in the U.K., publicly employed women are twenty times as likely as 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 men in all countries examined.

## [TABLE 5 ABOUT HERE]

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 reports the results of regression estimates of the public/private wage differential. The dependent variable is logged annual earnings. In Model I, we estimate the unadjusted ("gross") effects of public-sector employment, for men and women separately. We present these Model I results (which are based on mean log earnings) so that they can be compared with the multivariate results (Model II). These estimated premiums differ slightly from the pay premiums based on medians presented in Table 2. Overall, the two sets of unadjusted premium results are clearly consistent.

In Model II, we include a range of control variables -- hours worked, age and its square, and the education and occupational dummies -- to estimate an adjusted hourly wage differential.

Overall, Model II results indicate that in all of these countries, for both women and men, a sizable portion of the unadjusted premium -- and in several cases, the entire unadjusted premium

<sup>&</sup>lt;sup>15</sup> Full regression results are available from the authors.

-- is explained by sectoral differences in worker- and job-related characteristics. For women, public sector pay premiums remain only in two liberal regime countries -- Canada and the U.S. (approximately 21 and 7 percent, respectively) -- and a public sector *penalty* is found in the social democratic case, Sweden (approximately 9 percent); adjusted public/private differences are not significant in the other countries. <sup>16</sup>

The Model II results for men are similar in direction, although their adjusted public/private wage differentials are generally less favorable than are the women's; i.e., the premiums are smaller, the penalties larger. In Canada, government-employed men, all else equal, receive a pay advantage (approximately 14 percent), although it not as large as Canadian women's, while in the U.S., 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 of twice the magnitude as their female counterparts'; Belgian men join the Swedish men in facing 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, compositional differences explain all of the public pay premiums.

Our reliance on cross-sectional data prohibits controlling for unmeasured worker characteristics, which might reduce the apparent public/private differentials. On the other hand, we also were unable to measure fringe benefits, which are often higher in the public sector. We suspect that these two omissions may cancel each other out, but further research is clearly in order.

# Public Employment and the Gender Gap in Earnings (Question 4)

In the final empirical analyses, we shift the focus from public/private 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. In the top panel of Table 6, we present sectoral differences in *unadjusted* gender earnings ratios. The LIS data 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 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.

In Table 6, we compare the unadjusted public/private differentials based on our analysis to those reported by Rosenfeld and Kalleberg (1991), whose results are based on Wright's Comparative Class Structure 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. Note that the public/private differentials in the gender gap are narrower in the 1990s, the years of the LIS surveys, than in the early 1980s, when the data Rosenfeld and Kalleberg examined were gathered. This may reflect a secular increase in public-sector fiscal pressures, and an attendant slippage in the earnings position of public-sector workers over time. The only exception is Germany, where the LIS data show a larger public/private difference in the gender gap (.10) than that reported by Rosenfeld and Kalleberg (.02).

# [TABLE 6 ABOUT HERE]

What is the effect of public sector employment on the gender gap in earnings, and how does that vary across countries? To answer this question, we explore various counter-factual

scenarios. One simple thought experiment is to imagine that all public-sector employment were to vanish, in which case the overall gender earnings gap would equal that found in the private sector. As our results in Table 6 indicate, this would have the effect of inflating the gender differential in earnings in each of the countries studied, except for Sweden.

## [TABLE 7 ABOUT HERE]

Another way of assessing the impact of the public sector on earnings is to focus on the contribution of the public 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 earnings gap. Table 7 presents a standard decomposition analysis of the impact of government employment on the gender gap in earnings.<sup>17</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 the only change made would be the assignment of women to the public sector in the same proportions as is the case for men. With the exception of Sweden -- where female over-representation 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 over-representation in the public sector would increase the gender earnings gap, although the magnitude of difference would be quite

<sup>&</sup>lt;sup>17</sup> This decomposition is based on the regression results from OLS Model II. The full regression and decomposition results are available from the first author.

modest. If women were no longer over-represented in the public sector, the gender gap in earnings would be 2.7 percent larger in Canada, and 0.3 percent larger in the U.S. The small magnitude of these effects is somewhat counter-intuitive, given that the adjusted public pay premiums in Canada and the U.S. are substantial for women; however, the effect on the gender wage gap is attenuated 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 earnings would be *reduced* by 14 percent. This is because adjusted public-sector wages in Sweden are lower than those in the private sector. Thus, women's concentration in this lower-paying sector, all else equal, accounts for a considerable portion of the gender gap in earnings. As in Sweden, the gender difference in public-sector rates in the conservative countries explains a portion of the gender earnings 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; in the Dutch case, it is also because women are only slightly over-represented in public employment. Overall, the women's concentration in the public sector is most advantageous to women's earnings in the liberal countries and least so in the social democratic countries.

This conclusion is somewhat modified when we examine the "effects" row in Table 7.

This analysis addresses the contribution to the gender earnings gap of gender differences in returns to public employment. As 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 earnings coefficients to women in the public sector would *increase* the gender earnings gap; i.e.,

women benefit from relatively favorable adjusted earnings in the public sector. Assigning to women men's returns to public employment would worsen the gender earnings gap in all of the 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 0.6 percent in the U.K.

Taken together, in the liberal countries, gender differences in both public sector employment rates ("means") and returns ("effects") modestly increase gender earnings equality. In other words, women benefit from their higher public employment rates and from their higher (adjusted) wages in the public sector, compared to both the private sector and to their male counterparts in the public sector. In the conservative countries, the "means" and the "effects" contributions tend to work in opposite directions. In Belgium, where men but not women face an adjusted public sector penalty, the overall effects of differential returns to public employment serve to increase gender earnings equality (i.e., the gender gap is reduced by approximately 7 percent). In Sweden, earnings inequality is worsened -- the gender gap is increased by about 10 percent -- by the combined effects of extreme female over-representation in the public sector and the payment of lower (adjusted) wages paid to women in that sector; the effects of the public pay penalty on the overall gender earnings gap is actually lessened by the fact that women's public-sector wage penalty is smaller than men's.

### SUMMARY OF RESULTS

Both women's employment rates and patterns of public employment vary across the three regime types (Table 1). Women's employment rates are highest in the social democratic case, and lowest in the conservative countries. Likewise, the size of the public sector varies markedly;

public employment as a share of total employment is most extensive in the high-service social democratic countries, followed by the conservative countries; the liberal ("residual") welfare states have the lowest levels of public employment. Despite the historical linkage of public sector job growth with increased demand for female labor, the cross-sectional relationship between women's employment levels and government size is not straightforward, as can be seen in a comparison of the conservative countries (low employment, moderate public sector) and the liberal countries (higher employment, more limited public sector). Furthermore, women are significantly over-represented in public employment in all seven countries in this study, although the magnitude of that over-representation varies; female concentration in the public sector is most extreme in the Swedish case.

As expected, the median (unadjusted) earnings of public-sector workers exceed those of private sector workers, in all countries (Table 2). The magnitude of the public-sector premium is greatest in the liberal countries (1.24 to 1.50), moderate in the conservative countries (1.07 to 1.24), and smallest in the social democratic case (1.04 to 1.05). We suggest that pattern is explained by increasing fiscal pressures associated with the size of the government sector.

Also, as expected, the (unadjusted) public-sector advantage is highest at the bottom of the wage distribution. This pattern of gradation is true everywhere except in Belgium (Table 3). The concentration of the public pay advantage at the lower end of the earnings distribution is clearly due to the fact that in all countries, except Belgium, earnings are more compressed in the public sector. The extent to which the pay advantage is concentrated at the bottom is greatest in countries with the largest public/private differentials in earnings dispersion.

When we turn to the explanation for the unadjusted pay differentials seen in all of these countries, we find, first, that both women and men employed in the public sector are, as expected, significantly more educated and significantly more likely to be employed in professional, managerial, and technical positions, than are private sector workers, in all countries (Table 4). Our multivariate results indicate that, in all of these countries, 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- and job-related characteristics (Table 5). For women, public sector pay premiums remain only in Canada and the U.S.; remarkably, an adjusted public sector *penalty* was found in Sweden. The results for men are similar in direction, although their adjusted public/private wage differentials are generally less favorable than the women's; i.e., the premiums are smaller, the penalties larger. The results of the analyses of adjusted public sector premiums support our contention that public sector pay advantages diminish as the size of the public sector increases, even after controlling for education and occupation.

As expected, gender gaps in earnings are smaller in the public than in the private sector in all countries studies, except Sweden (Table 6). This is due to sectoral differences in the mix of occupations, that is, the concentration of highly skilled female-dominated professions in the public sectors, in combination with the more compressed wage structures. The decomposition results indicate that, in the liberal countries, gender differences in both public sector employment rates and returns *increase* gender earnings equality, but very modestly (Table 7). In the conservative countries, the "means" and the "effects" contributions tend to work in opposite directions; overall, the combination of the two increases gender earnings equality, but again, very

modestly. In Sweden, earnings inequality is actually worsened -- the gender gap increased by about 10 percent -- by the combined effects of extreme female over-representation in the public sector and the payment of lower (adjusted) wages paid to women in that sector.

## **DISCUSSION**

Our results modify conclusions that others have reached regarding women and public-sector employment. First of all, these findings constitute a partial challenge to Kolberg (1991), who popularized the claim that public employment is "good" for women, based on his study of welfare state employment in the social democratic countries. Our results support Kolberg's in that we find that the public sectors across these welfare states do offer more professional, managerial, and technical jobs than their counterparts in the private sectors and, in many countries, there are substantial (unadjusted) public sector pay advantages. However, our results challenge Kolberg's in that these pay advantages are not universally found; ironically, and somewhat surprisingly, the (unadjusted) public pay advantage is particularly modest in Sweden, our social democratic case. Furthermore, in most cases, once compositional differences are controlled for, the public sector pay advantages disappear in most countries, 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.

That said, a caveat is in order, with respect to our conclusions about cross-national variation in the relative advantages for women of public employment. Cash remuneration is but one job feature that is important to workers' well-being, both women and men. In some countries

-- most likely the social democratic countries and, to some extent, the conservative exemplars -- other employment-related factors may compensate for the relatively unimpressive wage profile of public sector employment, such as greater worker-controlled flexibility (e.g., options for reduced-hour work) and more extensive non-cash benefits. Likewise, a range of universal benefits in these countries may compensate for the lagging cash advantages of public sector employment. This clearly demands more research.

The findings presented here also contribute to the literatures on public/private wage differentials and on the gender earnings gap. With respect to the former, our use of comparable micro-data, in a range of countries, allows us to isolate and assess the impact of public employment on earnings across countries. 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 larger public sectors face greater fiscal pressures and, in response, they attenuate public sector pay advantages. However, we recognize that it is impossible, with a sample of seven countries, to pinpoint that the causal mechanism underlying variation in the premiums is public sector size. Policy packages -- operating as integrated wholes -- tend to vary across the three regime types; it is not possible to vary government size within regime types to fully test the independent effect of 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 -- its extent and its pay structure -- does not constitute a substantial explanation for variation across countries in gender earnings equality. Furthermore, our findings revealed, to our surprise, that in Sweden -- representing the social democratic countries -- gender-differentiated patterns of public employment actually decrease gender earnings equality. In Sweden, public sector jobs have the greatest potential to benefit women, because women are highly concentrated in Sweden's large public sector. An irony is that the low relative wages of public sector employees in Sweden means that there is a negative impact on women's overall earnings status, relative to men, rather than the positive effect that might have been expected.

Future research on these intertwined issues -- the effects of public employment on overall pay structures and on gender equality -- is needed. Again, more 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, the results and analyses presented in this paper also have implications for the analysis of welfare states and gender equality. Our results indicate that Esping-Andersen's posited regime types do capture important distinctions among contemporary welfare states. The size of the public sector, the extent of the public-sector wage premium, and the impact of the public sector on gender differentials in earnings, all vary more across clusters 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 earnings gap. There are many other important aspects

of welfare state policy that shape gender equality. Whether these cluster as neatly into the social democratic, conservative, and liberal regime types remains an issue for future research.

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

As women are over-represented in the public sectors of the industrialized countries, any effects of public sector restructuring -- both downsizing and wage restraint -- will likely be felt most sharply by women. Moreover, our results indicate that (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, welfare state employment is unlikely to promote women's economic advancement as we move into the next century. Social policy affecting women's overall employment (Gornick, Meyers, Ross 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.

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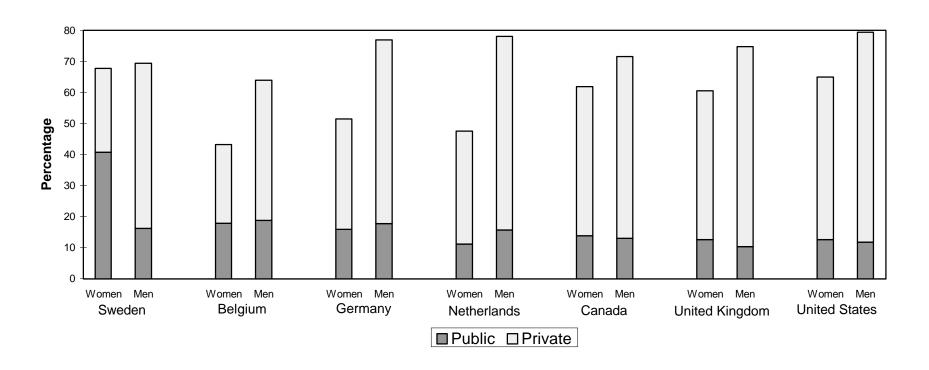
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Figure 1

EMPLOYMENT BY GENDER AND SECTOR



# **Public Sector Wage Premium by the Size of the Public Sector**

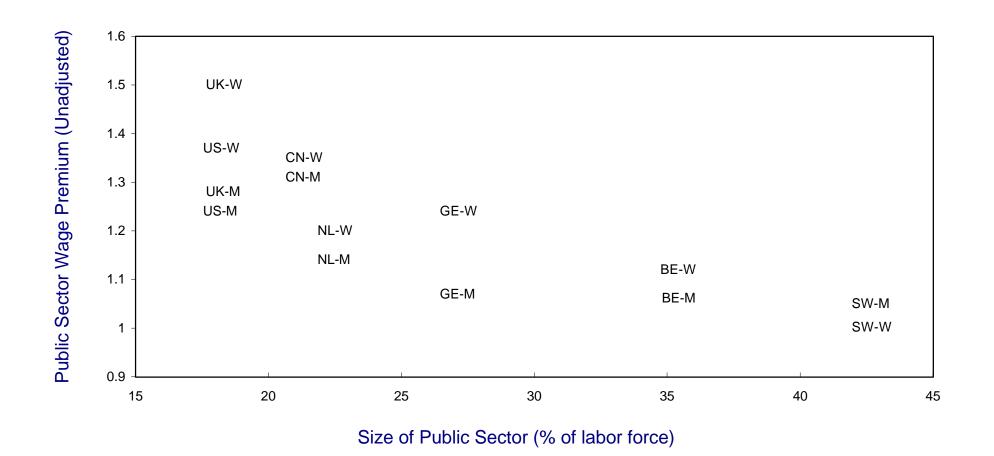


Table 1. EMPLOYMENT BY SECTOR SW92 BE92 GE89 NL91 CN91 UK91 US91 Men's employment rate 69.4 63.9 76.9 78.0 71.5 74.8 79.4 23.3 29.3 23.1 20.1 18.2 13.8 14.8 % Public % Private 76.7 70.7 76.9 79.9 81.8 86.1 85.2 67.7 43.2 47.5 61.9 60.5 65.0 Women's employment rate 51.4 41.2 22.4 % Public 60.1 30.9 23.4 20.8 19.4 39.9 79.2 % Private 58.8 69.1 76.6 77.6 80.6 All adults: % Public 34.3 21.4 20.2 17.2 17.1 41.5 26.0 % Private 58.5 65.7 74.0 78.6 79.8 82.8 82.9

		SW92	BE92	GE89	NL91	CN91	UK91	US9 <sup>2</sup>
Annual Earning	s (in national currency):							
Women	Public	151400	1168200	37730	41241	29860	13623	23000
	Private	145029	1044000	30482	34446	22154	9100	16800
Men	Public	189992	1428500	52178	57000	41372	17761	31050
	Private	180467	1311800	48901	49960	31557	13829	25000
Public/Private F	Earnings Ratios:							
Women	-ago . tanoo.	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

Notes: All public/private earnings differences are significant at p= 0.05.

Full-time labor force only.

TABLE 3. GROSS (UNADJUSTED) PUBLIC/PRIVATE EARNINGS RATIOS BY EARNINGS DECILE. SW92 BE92 GE89 NL91 CN91 UK91 US91 A. Women Earnings Decile 1st 1.39 1.18 1.40 1.76 2.02 2.65 1.60 2nd 2.68 1.47 1.18 1.08 1.46 1.54 1.71 3rd 1.14 1.38 1.57 1.42 1.14 1.34 2.46 4th 1.49 1.09 1.11 1.28 1.21 1.44 2.06 5th 1.88 1.39 1.04 1.12 1.29 1.18 1.35 6th 1.02 1.12 1.22 1.21 1.33 1.79 1.31 7th 1.02 1.17 1.23 1.17 1.41 1.72 1.26 8th 0.97 1.22 1.19 1.14 1.16 1.40 1.63 9th 1.14 0.93 1.20 1.15 1.11 1.34 1.35 Public Dispersion (90/10 Ratio) 4.61 2.89 2.26 5.37 3.34 3.89 2.45 Private Dispersion (90/10 Ratio) 4.37 2.21 2.97 6.95 6.31 6.13 5.91 0.66 1.02 0.82 0.66 Dispersion: Public/Private 0.85 0.54 0.66 B. Men Earnings Decile 1st 1.10 1.01 2.09 1.33 2.30 1.50 1.71 2nd 1.08 1.05 1.16 1.17 1.74 1.37 1.61 3rd 1.04 1.06 1.09 1.12 1.48 1.31 1.47 4th 1.05 1.05 1.07 1.15 1.37 1.33 1.35 5th 1.05 1.11 1.10 1.42 1.31 1.28 1.24 6th 1.03 1.11 1.12 1.43 1.28 1.25 1.21 7th 1.03 1.09 1.12 1.14 1.24 1.20 1.12 8th 1.00 1.09 1.12 1.13 1.13 1.05 1.20 9th 1.00 1.10 1.02 1.05 1.09 1.05 1.04 Public Dispersion (90/10 Ratio) 2.83 2.66 2.59 2.44 2.82 2.96 4.14 7.12 Private Dispersion (90/10 Ratio) 3.12 2.43 5.42 3.07 5.94 3.39 Dispersion: Public/Private 0.91 0.79 0.58 1.09 0.48 0.47 0.87

Notes: Full-time labor force only.

		SW92	BE92	GE89	NL91	CN91	UK91	US91
Percentage in I	High Education Category:							
Women	Public	41.2	48.6	70.6	42.5	73.7	64.7	66.9
	Private	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	45.9	32.7	85.5	31.5	69.4	54.9	67.7
	Private	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
Percentage in								
Professional	Occupation Category:							
Women	Public	57.8		49.8	63.9	59.9	87.0	52.1
	Private	17.7		12.5	37.7	33.3	24.0	28.3
	Odds Ratio	6.4		6.9	2.9	3.0	21.2	2.8
Men	Public	45.3		36.2	54.5	49.5	60.3	43.5
	Private	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

Notes: Full-time labor force only.

TABLE 5. REGRESSION RESULTS.
DEPENDENT VARIABLE: LOG ANNUAL EARNINGS.

	SW92	BE92	GE89	NL91	CN91	UK91	US91
A. Women	В	В	В	В	В	В	В
	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.
MODEL I							
Gross Effect of Public Sector	0.0516	0.1541	0.1472	0.2846	0.4037	0.3419	0.3319
Employment on Log Earnings	0.0256	0.0254	0.0545	0.0738	0.0209	0.0262	0.0254
	***	***	***	***	***	***	***
MODEL II (with selection correction)							
Net Effect of Public Sector	-0.0854	0.0177	-0.0147	0.0802	0.2100	0.0527	0.0754
Employment on Log Earnings	0.0258	0.0217	0.0513	0.0680	0.0203	0.0278	0.0232
(control: hours, age, educ, occ)	***				***		***
B. Men							
MODEL I							
Gross Effect of Public Sector	0.0465	0.0508	0.1662	0.1371	0.3072	0.1933	0.2378
Employment on Log Earnings	0.0182	0.0205	0.0342	0.0313	0.0176	0.0273	0.0256
	***	***	***	***	***	***	***
MODEL II (with selection correction)							
Net Effect of Public Sector	-0.1523	-0.0620	-0.0343	-0.0298	0.1408	0.0353	0.0213
Employment on Log Earnings	0.0166	0.0176	0.0271	0.0265	0.0163	0.0230	0.0220
(control: hours, age, educ, occ)	***	***			***		

Notes: Numbers marked with \*\*\* are significant at p= 0.05.

Full-time labor force only.

TABLE 6: GROSS (UNADJUSTED) FEMALE/MALE EARNINGS RATIOS.
COMPARISON OF RESUTLS: LIS AND Rosenfeld AND KALLEBERG.

	SW	BE	GE	NL	CN	UK	US
LIS Data (ages 18-64):	1992	1992	1989	1991	1991	1991	1991
and a sum (a good to a cop)							
Female/Male Earnings Ratio:							
Public	0.80	0.82	0.72	0.72	0.72	0.78	0.74
Private	0.80	0.80	0.62	0.70	0.70	0.66	0.67
Difference	0.00	0.02	0.10	0.02	0.02	0.12	0.07
Rosenfeld and Kalleberg (ages 20-60):	1980		1983		1982	1983	1980
Female/Male Earnings Ratio:							
Public	0.75		0.72		0.67	0.76	0.70
Private	0.78		0.70		0.58	0.57	0.57
Difference	-0.03		0.02		0.09	0.19	0.13

Notes: Source: Rosenfeld and Kalleberg, 1991.

Full-time labor force only.

TABLE 7. DECOMPOSITION OF GENDER EARNINGS GAPS.
DEPENDENT VARIABLE: LOG ANNUAL EARNINGS (MODEL II).

	SW92	BE92	GE89	NL91	CN91	UK86	US91
Difference in log earnings:	0.370	0.240	0.430	0.460	0.420	0.370	0.360
Difference due to differences in:							
Means:							
Public	0.052	0.005	0.003	0.000	-0.011	-0.004	-0.001
As a percent of gender gap	14.0	2.1	0.6	0.1	-2.7	-1.0	-0.3
in wages							
Effects:							
Public	-0.016	-0.022	-0.004	-0.022	-0.015	-0.002	-0.009
As a percent of gender gap	-4.3	-9.3	-0.9	-4.8	-3.5	-0.6	-2.4
in wages							

Notes: Full-time labor force only.