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**Supporting the Employment of Mothers:  
Policy Variation Across Fourteen Welfare States**

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## SUMMARY

Despite their broadly similar political and economic systems, the rates and patterns of mothers' employment vary considerably across industrialized countries. This variation raises questions about the role played by government policies in enabling mothers to choose employment and, in turn, in shaping both gender equality and family economic well-being.

This paper compares fourteen OECD countries, as of the middle-to-late 1980s, with respect to their provision of policies that support mothers' employment: parental leave, child care, and the scheduling of public education. Newly gathered data on eighteen policy indicators are presented; these indicators were chosen to capture support for maternal employment, regardless of national intent. The indicators are then standardized, weighted, and summed into indices. By differentiating policies that affect maternal employment from family policies more generally, while simultaneously aggregating individual policies and policy features into policy "packages", these indices reveal dramatic cross-national differences in policy provisions.

The empirical results reveal loose clusters of countries that correspond only partially to prevailing welfare state typologies. For mothers with preschool-aged children, only five of the fourteen countries provided reasonably complete and continuous benefits that supported their options for combining paid work with family responsibilities. In the remaining countries, government provisions were much more limited or discontinuous. The pattern of cross-national policy variation changed notably when policies affecting mothers with older children were examined.

The links between these findings and three sets of outcomes are considered. The indices provide an improved measure of public support for maternal employment and are expected to help explain cross-national differences in the level and continuity of women's labor market attachment. Prior findings on women's labor supply provide initial support for this conclusion. These indices are also useful for contrasting family benefits that are provided through direct cash transfers with those that take the form of support for mothers' employment. Cross-national variation in combinations of transfers with employment supports is found to correspond to differences in child poverty rates. Finally, these policy findings contribute to the body of scholarship that seeks to integrate gender issues more explicitly into research on welfare state regimes. This study suggests that the country clusters identified in the dominant regime model fail to cohere with respect to the subset of family policies that specifically help women to combine paid work with parenting.

## INTRODUCTION

During the post-war period, rates of female employment, especially of maternal employment, have increased markedly throughout the industrialized countries. Changes in women's employment patterns have been influenced by a range of factors, including evolving gender roles, demographic shifts and economic restructuring. Despite their broadly similar political and economic systems, the rates and patterns of women's employment vary considerably across industrialized countries. This variation raises questions about the role that government policies play in influencing women's work decisions and, in turn, in shaping both gender equality and family economic well-being.

Existing cross-national variation in both government policy and in patterns of maternal employment provides a framework for assessing policy effects on employment outcomes. Both incomplete theoretical specifications and data limitations, however, have constrained comparative research on the role of policy in shaping maternal employment. Many analysts have failed to clearly disaggregate family policies into policies that affect maternal employment and those with largely unrelated effects<sup>1</sup>. Policies that influence mothers' employment have been especially difficult to study cross-nationally because of the shortage of comparable data on institutional features and expenditures.

This paper addresses these gaps by comparing fourteen industrialized countries with respect to a subset of public "family policies" that facilitate the employment of mothers: parental leave, child care, and the scheduling of public education.<sup>2</sup> Data on eighteen measures of public policy effort are presented for fourteen countries. The data are then used to construct composite indices of policy "packages" that support employment for mothers with children of different ages and to compare countries' performances cross-nationally. Finally, levels of support for maternal employment are contrasted with levels of income assistance for families with children. By aggregating a range of policies that affect mothers' employment, while differentiating them from

family policies more generally, these comparisons reveal dramatic cross-national variation in both support for the employment choices of mothers and in the ways that countries combine employment support with income maintenance.

## **BACKGROUND**

### Defining Employment-Supporting Policies.

The policies examined in this study are a subset of family policies. Family policy is typically defined broadly to include all government benefits that contribute to the health and well-being of families with children through direct cash transfers (such as child allowances and maternity benefits), tax expenditures (such as dependent tax credits), in-kind benefits (such as housing) and direct services (such as public education and child care). Family policies can be defined even more broadly to include other services, such as health care, that benefit all citizens including families with children.

The diversity of family policy packages reflects cross-national differences in historical origins, in contemporary policy goals, and in the use of alternative mechanisms aimed at achieving the same goals. Public policies that support maternal employment may be adopted with the explicit goal of increasing employment options; these policies may also be adopted in response to largely unrelated social or economic needs, for example, in response to depopulation and/or labour shortages. In different times and different places, for example, public child care has been developed to enhance children's health and development, to achieve other social service goals, to encourage childbearing and to facilitate mothers' employment (Ergas 1990; Kamerman 1991a, 1991b; Kamerman and Kahn 1991a, 1991b; OECD 1990b). Parental leave policies have been adopted with the explicit goals of promoting infant health, securing employment opportunities for women, providing income security for families, and reducing gender divisions in the allocation of household work (Haas 1991; Kamerman 1980, 1991a; Stetson 1991).

Although all family policies are presumed to benefit both parents and children, the effects of individual policies may affect family members differently. Children may benefit, for example, from fewer hours of more educationally-enriching child care. Mothers may benefit from more hours of less expensive custodial care. It is also important analytically to differentiate family policies that benefit children by enabling mothers to work at home as full-time caregivers (e.g., family allowances) from those that enhance family income by supporting mothers' involvement in paid work (e.g. paid maternity leaves).

The microeconomic theory of labour supply suggests one dimension along which family policies can usefully be characterized: the extent to which policies support the option of employment for women with dependent children. Policies may affect women's employment decisions by encouraging unbroken labour force attachments around the time of childbirth, by increasing the supply or reducing the cost of nonmaternal child care, or by providing *de facto* child care via public school schedules that are compatible with parental employment.

### Labour Supply Theory and Research.

The selection of variables for this study reflects microeconomic theory and empirical research on the policy and non-policy factors that affect women's choices regarding the allocation of their time between paid work and all other activities. Extending the basic consumption model, labour supply is viewed as a consumption choice between two commodities -- market income and time spent outside of paid work (i.e., non-market time). According to labour supply theory, a woman faces a budget constraint determined by her market wage rate (i.e., the slope of the budget constraint) and her other available income (i.e., her non-market or endowed income). Women will choose the combination of market income and non-market time determined by the point of tangency between the budget constraint and the highest possible indifference curve.<sup>3</sup>

The labour supply model suggests that the *presence of children* in the home will have an impact on a woman's decision to work for pay and on her hours worked. Children are understood

to both raise the value that a woman places on her time outside of paid work (i.e., to steepen her indifference curves) and to lower her effective market wages to the extent that substitute care involves expenditures. The greater a woman's childrearing responsibilities, the less likely it is that she will choose to enter paid work. For women who are employed, greater childrearing responsibilities would reduce their hours in paid work. A substantial body of empirical research supports these predictions with evidence of the negative effects of having young children on maternal labour supply in industrialized countries (Connelly 1991; Gornick 1994; Knudsen and Peters 1994; Leibowitz, Waite and Witsberger 1988; Mallier and Rosser 1986; Phipps 1993).

Labour supply theory also suggests ways that government policies may offset the downward pressure that children exert on women's labour supply. *Child care* and *parental leave* have received the greatest attention in empirical studies; recently, scholars have begun to examine the relationship between public *school schedules* and maternal employment.

**Child Care.** The conventional labour supply model suggests at least two straightforward approaches to the effects of child care on women's employment. The first approach depicts child care as affecting women's preferences for non-market time versus time spent in paid work (Blau and Ferber 1992). Theoretically, more satisfactory child care alternatives would decrease mothers' preferences for time spent at home versus time spent in market work, *all else equal*. In the second approach, features of child care affect women's budget constraints rather than their relative preferences for home time (Connelly 1992; Michalopoulos, Robins and Garfinkel 1992; Ribar 1992). The price of market child care may be viewed as a tax levied on mothers' hourly wages. Higher-priced care would have the same effect as lower net wages -- a decrease in employment and a decrease in hours of paid work among women.

The two theoretical approaches suggest that improvements in women's child care options will be associated with increases in their labour supply. Single-country empirical studies suggest that the relationships among the demand for child care, the price and availability of care, and

women's labour supply are complicated and multi-directional. On the whole, however, the literature supports the theoretically-driven prediction that having more attractive child care options increases maternal employment (Blau and Robins 1988; Connelly 1990, 1991, 1992; Kimmel 1995; Leibowitz, Klerman and Waite 1992; Meyers 1993; Michalopoulos, Robins and Garfinkel 1991; Ribar 1992; Stolzenberg and Waite 1984; U.S. General Accounting Office 1994). In one of the few studies to address this question cross-nationally, Schmidt (1993) reported that child care growth, from 1960 to 1980, was positively associated with increases in female employment rates, across eighteen OECD countries.

**Parental Leave.** The relationship between maternal employment and parental leave policies is understood differently than the relationship between maternal employment and child care. Generous maternity leave provisions are generally believed to increase women's attachment to paid work in the short term. In addition to offering basic income support to new mothers, many maternity policies are explicitly designed to prevent women from exiting employment following childbirth (Trzcinski 1991).

The relationship between elements of maternity leave and mothers' longer-term attachment to paid work is more complicated. In contrast to child care, which enables mothers to spend more time on the job, maternity leaves enable working mothers to spend more time at home -- even though they usually remain officially "employed". Some scholars express concerns that policies that enable long leave periods may limit certain career-enhancing opportunities that require a degree of continuity on the job (e.g., opportunities for training and promotion). This constraint may have a negative long-term effect on mothers' earnings, and in turn, on their labour supply. On the other hand, to the extent that job guarantees and wage replacement lessen the probability that mothers will exit paid work or change jobs following each childbirth, maternity provisions would strengthen mothers' long-term labour market attachment,



The empirical literature on the effects of leave provisions on mothers' employment is limited. O'Connell (1990) reports that the availability of employer-provided leave increases the likelihood of an early return to work after the birth of a first child. Joesch (1995) concludes that women's labour force attachment increases with the provision of paid leave. Klerman and Leibowitz (1990), however, found only weak evidence of a relationship between United States' state maternity leave statutes and employment. Using data from seventeen countries, Ruhm and Teague (1995) conclude that the duration of paid parental leave is associated with increased female employment rates. Others have reported, based on cross-national research, that elements of child care and/or maternity leave policy affect not only women's labour force participation (and employment) rates but their hours worked as well (Dex and Shaw 1986; Gornick 1994; Gustafsson and Stafford 1995; Rosenfeld and Birkelund 1995).

**Public School Schedules.** School schedules can be a factor in mothers' employment decisions because public school provides *de facto* child care for mothers of school-aged children. Labour supply theory suggests that improvements in women's child care options will be associated with increases in maternal labour supply. For mothers who rely on schools to provide child care for their older children, "improvement" would include having children enrolled in public school for more hours per day, for more weeks per year, and on schedules that are more consistent with typical employment schedules.

The role of public schooling as child care has received increasing attention over the last decade (e.g., Commission of the European Communities 1990; OECD 1990b). Some observers (e.g., White 1983) have argued that child care problems may actually worsen during the early school years. School vacations typically coincide with religious holidays and summer holidays, and only imperfectly correspond to parents' breaks from paid work. If parents relinquish more flexible child care arrangements when their children begin primary school, they may face even greater problems coordinating childminding and paid work as their children age.

Although policy analysts are drawing attention to the role of school schedules in employment decisions, empirical research on the topic is all but nonexistent. The Commission of the European Communities (1990) reports that women with children aged five to nine have higher activity rates in European countries that have continuous school days, compared with those with school schedules characterized by attendance in shifts, short school days, or days broken by a lunch break. In a study of four English-speaking countries, Gornick (1994) presents evidence of sharp increases in mothers' employment rates that correspond to the age at which compulsory education begins in each country.

#### Employment-Supporting Policies in Comparative Perspective.

There have been several efforts in recent years to compile information on family policies, including child care and parental leave, in industrialized and developing countries. Comparative studies take several forms. First, there are several compendia of quantitative and qualitative data on program rules and/or expenditures<sup>4</sup>. Compendia typically present information on large numbers of countries but with relatively little detail; none, unfortunately, contain data on child care expenditures or on important parental leave details such as coverage and take-up rates. Another important literature comprises volumes of country case studies that describe child care and parental leave policies in great detail (Baker (1996); Cochran et al. (1993); Kahn and Kamerman (1994); Kamerman and Kahn (1978 and 1994); Olmsted and Weikart (1989); Woodill et al (1992)). While these case studies present rich historical, institutional, and programmatic detail, it is difficult to use them to paint a comparative portrait because policy features are not consistently measured. Finally, a number of scholars have compared the institutional detail of family policies across several countries, focussing on either single policies or policy configurations (Bradshaw et al 1993; Ergas 1990; Gauthier 1991; Gormley and Peters 1992; Gustafsson 1994; Leira 1993; Scheiwe 1994; Wennemo 1994; Wilensky 1990). These studies provide important insights about variation in the architecture of family policies, and about associated outcomes, such

as inequality and family poverty. Few have considered women's access to employment explicitly as a policy goal.

In the last decade, feminist scholars have turned their attention to incorporating questions of gender equality into welfare state theory and research. Recent works have focused on the effects of family policies on a range of outcomes that are important to women, particularly women's integration into the labour market and their economic independence vis-à-vis the family (Lewis and Ostner 1991; O'Connor 1993; Orloff 1996; Sainsbury 1994; Siaroff 1994). This new generation of scholarship has highlighted important subtleties in the impact of welfare state policies on women's status as citizens, workers, and family members. The classic framing of welfare state development in terms of the interaction between the state and the market is currently giving way to more nuanced analyses that consider interdependencies among the state, market, and family.

A focus on policies that disproportionately affect women is also evident in recent challenges to welfare state regime theory. It is now commonplace for comparative scholars of the welfare state to speak of clusters of countries, i.e., groups of countries with similar characteristics, typically in relation to national-level public institutions. Esping-Andersen's (1990) empirically-based model is the most well known. He posits the existence of three variants of the capitalist welfare state -- the social democratic (primarily the Nordic countries), the conservative-corporatist (dominated by the European continental countries) and the liberal (primarily the English-speaking countries). Each regime type is characterized by a relatively similar set of social policies and by corresponding socio-economic outcomes and employment patterns. Esping-Andersen argues, specifically, that each welfare state model is associated with a distinct labour market trajectory for women. Female employment levels would be expected to differ across regime types, with high levels of female employment in the *social democratic* countries (in which demand is driven by the large public sector and supply by extensive service provision); moderate levels in the *liberal* countries (largely market-driven); and lower levels in the *conservative-*

*corporatist* countries (due to the historic marginalization of female workers and the existence of policies that encourage mothers to remain in the home).

A small body of empirical work has challenged the Esping-Andersen cluster model by focussing on *intra*-cluster variation in policies and outcomes with disproportionate importance for women. Detailed comparisons of social policy across the Nordic countries, for example, reveal significant variation in government support for maternal employment. This policy variation corresponds to variation in female employment, with Norway diverging from the other social democratic welfare states in having both lower levels of government support for the employment of mothers and lower levels of maternal employment as well (Borchorst 1994; Leira 1992; Sainsbury 1996). Gornick (1994) finds similar variation across four English-speaking countries, with inter-country differences in maternal employment patterns corresponding closely to differences in the generosity of public child care and leave provisions. Bussemaker and van Kersbergen (1996) conclude that policy variation among the conservative regime countries leads to divergent women's employment patterns between Belgium and Germany, on the one hand, and Italy and the Netherlands, on the other.

## **RESEARCH ISSUES**

The relationship between public policies and employment outcomes demands further study; cross-national research designs are clearly promising because policy variations that cannot be observed within a single country can be seen across countries. Comparative scholarship on the effect of family policies on maternal employment has been limited both by the lack of comparable data and by the use of policy variables that have been, paradoxically, operationalized either too broadly (e.g., all spending on families) or too narrowly (e.g., child care variables alone).

A first important challenge for cross-national research is the *disaggregation* of family policy. Although maternity leave, child care, and school policies are often subsumed under the umbrella of family policy, they represent a specialized subset of all benefits provided to families

with children. To the extent that family policies, construed broadly, are directed toward goals other than supporting maternal employment -- such as reducing family poverty or increasing fertility -- this subset of policies may be weak even in countries with otherwise generous social provisions for families.

A second important challenge is the *aggregation* of specific policy indicators into measures of the larger packages of policies that affect maternal employment. Single policies are poor indicators of overall government efforts to achieve complex policy goals. Some policies may be near substitutes for one another; for example, direct spending on public child care and tax expenditures that reduce the cost of private care may represent alternative strategies for the achievement of a common goal. In other cases, the impact of policies is more nearly additive. The generosity of maternity leave provisions, for example, depends both on the length of the leave and on the average wage replacement rate during that period. Policies can interact in an even more complex fashion. The overall generosity of maternity leave, for example, is mediated in some countries by eligibility restrictions that narrow the pool of potential claimants. In the case of family policies, interactions over time may also be important. For example, employed mothers may face disruptive breakdowns in child care as their children age because public preschools provide better coverage for young children than do intermittent school days for older children.

This study addresses these challenges by identifying, compiling and aggregating multiple indicators of the subset of family policies that are expected to support maternal employment.

## **METHODS**

### Selection of Countries.

The fourteen countries in this study were selected to correspond to the core group of micro-datasets included in the Luxembourg Income Study. The Luxembourg Income Study (LIS) is a public access archive of micro-datasets gathered from a diverse set of industrialized countries and made comparable. The datasets are based primarily on household surveys or tax records;

they contain demographic, employment, and detailed income data at the household and individual level.<sup>5</sup> The decision to link policy measures to micro-data available through LIS dictated both the countries to be included in this study and the year of initial observation. This paper presents baseline policy data that corresponds to the second wave of the LIS micro-data, the period of 1984-1987.<sup>6</sup>

### Selection of Policy Indicators.

Four criteria guided the final selection of the eighteen policy indicators included in this study. First, the indicator measured an aspect of policy reasonably assumed to be under government control. Maternal employment patterns are shaped by policy and non-policy factors, and by both public and private sector policies. Non-policy factors include demographic characteristics, wage and occupational structures, and prevailing norms about gender roles and the care of children. Employment patterns are also influenced by the policies of private employers, child care professionals, and other nongovernmental entities. This study concentrates on indicators of *public policies*. Factors that influence labour market patterns but are only indirectly under the control of governments, such as dominant beliefs about gender roles and characteristics of private child care arrangements, are excluded.

Second, the indicator captured a policy feature that labour supply theory predicts will affect a mother's decisions to enter or to remain in paid work. Public family policies typically balance several competing goals. This analysis does not assume that support for maternal employment was a primary or even explicit goal of the policies measured with each indicator. Public child care may be provided, for example, for reasons related to child welfare or child development. Regardless of the explicit or implicit policy goal, a larger supply of free or low cost public child care is expected to increase the probability that mothers will enter employment. Indicators included in this study are assumed to support mothers' decisions to enter or remain in paid labour by (1) strengthening mothers' labour force attachments at the time of childbirth; (2)

increasing paternal involvement in child caregiving activities; (3) increasing the supply or reducing the cost of non-parental child care; and/or (4) extending the time children are cared for in public schools or by removing discontinuities in children's school schedules.

Third, the indicator was exogenous to individual employment decisions. Because decisions about employment and child care arrangements may be simultaneous, specifying policy measures that are exogenous to individual employment decisions is difficult. Measures included in this study are limited to indicators of government policies that are logically independent or precede the employment decisions of individual women. For example, the assumption here is that enrollment in publicly-funded child care is a better measure of supply (because supply is set by public policies and appropriations) than enrollment in all forms of non-parental care (which is a function of both public policy and private family and market arrangements). The distinction is not absolute. All family policies may reflect constituent demands for benefits that are consistent with prevailing employment preferences and behaviours. For individual decision makers, however, the availability of publicly-subsidized child care likely represents a fixed characteristic influencing labour supply preferences and choices.

Fourth, reliable and reasonably comparable data were available for all of the fourteen countries. There are two exceptions to this general rule. First, data on child care expenditures were available in only six of the fourteen countries and, second, data on enrollments in publicly-funded after-school child care were available in only six countries. Although data on these two indicators were incomplete, they are included because they enhance cross-national comparisons significantly. Other indicators that would be helpful for differentiating national performance, such as the hours during which public child care is routinely available, were excluded because reliable data were available for too few countries.

It is important to clarify that other public policies that potentially affect the labour supply of women were excluded from this study. These policies, which extend beyond the traditional boundaries of *family* policy, include: (1) income transfer rules, especially those that determine

benefit reductions associated with earnings; (2) public policies that encourage part-time work, for example, through the adoption of worker protections (e.g., wage equity for part-time workers and mandatory pro-rating of benefits) or through substantial demand for part-time workers in public employment; (3) marginal tax rates and the tax treatment of spouses; and (4) the public provision of health services and/or insurance for adults and their children.

These policies were excluded for a variety of reasons. First, income transfer rules, especially rules on the withdrawal of means-tested benefits, are mostly likely to affect the labour supply of lone mothers who are dependent on means-tested benefits. The labour market behaviour of these mothers is very different from that of mothers whose primary income sources are family- and employment-based; this study emphasizes policies affecting the latter group, which includes married mothers and lone mothers who do not substantially rely on income transfers. Second, policies that increase part-time work clearly have mixed effects on women's employment outcomes, in that they encourage employment but at limited hours and in a limited range of occupations. This study is restricted to policies that facilitate both participation and hours and to those that potentially widen (or at least do not constrain) occupational opportunities. Third, marginal tax rates and the tax treatment of spouses are known to affect women's labour supply but the effects of tax rules are largely differentiated according to women's *marital* status, not their *parenting* status; the focus here is on policies that affect mothers' employment specifically. Finally, policies that shape the availability of health services and/or insurance were excluded largely due to data limitations; the labour supply effects of health benefits that are tightly linked to employment, as in the United States, clearly demand further attention.

#### Data Sources and Operationalization of Indicators.

The eighteen indicators used in this study are described in Table 1. Data were collected from published comparative reports and from country-specific sources. Sources of published data for each country are presented in Appendix 5. In addition, policy experts in each country



reviewed preliminary findings and corrected data as necessary. The panel of experts for this study is noted in Appendix 6.

The first six indicators measure policies that influence the generosity or availability of benefits for new parents. The next eight indicators measure public efforts in the area of child care. These eight include two measures of national child care expenditures (direct spending and tax expenditures), two indicators of age-specific child care entitlements (through national legislation or administrative policy) and four age-specific measures of public or publicly-subsidized child care enrollments (as a proxy for the supply of low- or no-cost public care). Four final measures capture public school policies that increase the supply of *de facto* child care through early school enrollments and through school schedules that more closely correspond to the standard full-time, full-year employment schedule.

#### Index Construction.

A set of indices were constructed from the eighteen indicators in order to capture policy configurations that affect mothers with children of different ages. As necessary, country-specific data were converted into common metrics: for example, expenditures were converted to 1987 United States dollars. Disparate indicators were rendered comparable by standardizing them as percentages of *maximum levels of policy effort* (see Table 1). Supply of public child care, for example, is standardized as the percentage of children in a given age range in public or publicly-subsidized child care; maternity benefit duration is standardized as a percentage of fifty-two weeks; school hours are standardized as a percentage of a typical forty-hour work week. In a few instances, it was necessary to designate an absolute maximum based on empirically derived values. For example, tax credits are standardized as a fraction of \$2,600 in United States dollars, an estimate of the minimum annual cost for full-time private child care in the United States in 1987. In other cases, the presence of a policy, e.g., the availability of paternity benefits, was coded as

**Table 1**  
**Measures Used in Indices, by Index**

Measure	Maximum Effort	Policies that Support Employment for Mothers with		
		Children Under Three	Preschool-Aged Children	School-Aged Children
Legislated Job Protection	Yes =1	X		
Paid Maternity Leave	52 Weeks	X		
Wage Replacement Rate	100%	X		
Coverage	100%	X		
Extended Leave	na			
Paternity Benefits	Yes = 1	X		
Child Care Expenditures	na			
Tax Relief for Child Care	\$2,600	X	X	X
Guaranteed Child Care Coverage (0-2)	Ages 0-2 = 2	X		
Guaranteed Child Care Coverage (3-5)	Ages 3-5 = 2		X	
Percent Children (0-2) in Publicly Funded Child Care	100%	X		
Percent (3-School-Age) Children in Publicly Funded Child Care	100%		X	
Percent (Age 5) Children in Preprimary or School	100%		X	
Percent Children in Publicly Funded After-School Care	100%			X
Age of Compulsory School	Age 5 = 3			X
School Day	40 Hours			X
School Year	260 Days			X
Continuous School Day	Yes = 1			X

Note: Two of the eighteen indicators in the database were not used in the indices. Extended leave was omitted because the degree to which it is employment-enabling in the long run has not been established. In addition, child care expenditures were excluded due to data limitations.

one and its absence as zero. A more complete discussion of the index construction methodology is provided in Appendix 1.

After individual indicators were converted into comparable units they were weighted and summed into age-specific indices. Finally, numeric scores for each index were converted into aggregate measures of maximum effort ranging from 0 to 100, with 100 representing 100 percent of the maximum achievable score for this index. Table 1 presents the measures used in the indices, by index; index formulas, values, and country rankings are reported in Table 5.

The first index, *Policies that Support Employment for Mothers with Children under Six*, combines policies that support the employment option for mothers in the years between childbirth and children's entry into public school: job protection at childbirth, the coverage and generosity of maternity leaves, the availability of any paternity benefits, child care entitlements, the availability of public child care, and tax relief for private child care. This index comprises two component indices that are more finely defined by children's ages. The first of the two, *Policies that Support Employment for Women with Children under Three*, combines eight indicators of public provisions that protect women's employment and wages at the time of childbirth and that provide alternatives to maternal care for infants and toddlers. The other component, *Policies that Support Employment for Mothers with Preschool-Aged Children*, combines four indicators that reflect government efforts to increase the supply of public child care for children from age three until school enrollment.

A separate index, *Policies that Support Employment for Mothers with School-Aged Children*, combines the length and continuity of the public school day, length of the school year, and the availability of child care for older children (through public after school programs and tax credits). Due to data limitations, only six countries are included in this final index.

Although the results for each index are presented in like units, index scores for individual countries cannot be compared *across indices*. Values for individual items and for the indices as a whole are very sensitive to the selection, coding, and standardization. Index scores can be

meaningfully compared only within individual indices. Comparisons of performances across indices should be restricted to comparisons of countries' relative performances (i.e., their ranks).

### Analysis.

The analyses in this paper are primary descriptive. Individual data elements measuring parental leave, child care, and school schedules are first compared across the fourteen countries. Age-specific indices are then analyzed to identify clusters of high- and low-performing countries with respect to policy packages that support the decisions of mothers to enter or to remain in the labour market. Country rankings are compared, within and across indices, to identify discontinuities in policies supporting maternal employment for women with children of different ages.

The final step in the analysis considers the role of employment-supporting policies in the larger framework of national-level family policy. Countries' scores on the index of *Policies that Support Employment for Mothers with Children under Age Six* are compared to their performance on an aggregate measure of spending on family benefits: annual cash transfers per child under age fifteen. Expenditure data are adapted from Kamerman and Kahn (1991b) and include family and child allowances, public assistance benefits, and special family-related income and housing allowance benefits<sup>7</sup>. Expenditures on child care and parental leave benefits are not included.

## **FINDINGS**

### Policy Performance: Parental Leave, Child Care, School Schedules.

**Parental Leave.** As of the middle to late 1980's, all but three of the countries made near-universal provisions for job protection and wage replacement in the months following the birth of a child (see Table 2). The United States and Australia were the most prominent exceptions. The United States had no national law providing job protection at the time of childbirth; in Australia,

**Table 2**  
**Public Parental Leave Policies**

	Legislated Job Protection		Paid Maternity Leave <i>Weeks</i>		Wage Replacement Rate <i>% Wages</i>		Coverage <i>% Employed Women</i>		Extended Leave <i>Weeks</i>		Paternity Benefits	
Country	Data	Notes	Data	Notes	Data	Notes	Data	Notes	Data	Notes	Data	Notes
Australia	yes		12	(1/)	60%	(5/)	10%	(9/)	52	(12/)	yes	
Belgium	yes		14		77%	(6/)	100%		0		no	
Canada	yes		15		60%		100%		0		no	
Denmark	yes		18		90%		100%		10		yes	
Finland	yes		43		80%		100%		111		yes	
France	yes		16		84%		100%		140		yes	
Germany	yes		14		100%		100%		0		yes	
Italy	yes		20	(2/)	80%		100%		136		yes	(15/)
Luxembourg	yes		16		100%		100%		0		no	
Netherlands	yes		12		100%		100%		0	(13/)	no	
Norway	yes		18		100%		100%		26		yes	
Sweden	yes		52		90%		100%		26	(14/)	yes	
United Kingdom	yes		18	(3/)	46%	(7/)	60%	(10/)	22		no	
United States	no		6	(4/)	60%	(8/)	25%	(11/)	0		no	

Note: Leave and wage replacement data refer only to those women covered under public or publicly mandated private maternity benefits.

federal law guaranteed up to twelve months of job protection but provided no wage replacement. The United Kingdom also fell short relative to other countries, primarily because eligibility restrictions (e.g., on minimum earnings and job tenure) were such that only approximately 60 percent of employed women had access to both job protection and wage replacement.

In the other countries, all or nearly all employed women were covered by national job protection and wage replacement benefits. The length of protection and adequacy of wage replacement varied substantially. On the high end, generous, universal systems in three Nordic countries (Sweden, Finland and Norway) provided full or nearly full wage replacement for six months to one year. In Finland, generous paid leave was supplemented with over two years of extended, job-protected leave; in Sweden, parents had a right to unpaid leave until the child was eighteen months old.

In about half of the countries, mothers' employment -- and paternal involvement in early child care -- was facilitated by the extension of some form of paid or unpaid leave to fathers. In general, countries with more extensive maternity benefits were more likely to provide benefits to fathers. Some exceptions are notable. Australia, with very limited benefits for women, did extend limited benefits to fathers as well. At the same time, a few countries with relatively generous policies for mothers had made no provisions for fathers -- including Belgium, Luxembourg, and the Netherlands.

**Child Care.** All fourteen countries made some public investments in child care. As with parental leave policies, however, the form and intensity of support varied markedly (see Table 3). Reasonably comparable data on direct child care expenditures were available for only six countries. At the high end, Sweden spent \$1,885 (in 1987 United States dollars) per year per child under fifteen and Finland spent \$1,212. At the low end, the United States and Canada each invested less than \$50 per child. Data were available for all countries on indirect tax expenditures that are aimed at offsetting the cost of private household expenditures on child care. Tax relief

**Table 3**  
**Child Care Policies: Public Support**

Country	Tax Relief for Child Care <i>1987 US Dollars</i>		Guaranteed Child Care Coverage (0-2) <i>Age (years)</i>		Guaranteed Child Care Coverage (3-5) <i>Age (years)</i>	
	Data	Notes	Data	Notes	Data	Notes
Australia	\$0		none		none	
Belgium	\$1,118		0-2		none	
Canada	\$851		none		none	
Denmark	\$0		0-2	(16/)	3-5	(16/)
Finland	\$198		0-2	(17/)	3-5	(17/)
France	\$699		2		3-5	
Germany	\$0		none		none	
Italy	\$0		none	(18/)	3-5	
Luxembourg	\$599		none		none	
Netherlands	\$384		none		none	
Norway	\$342		none		none	
Sweden	\$0		>18 mo.		3-5	
United Kingdom	\$0		none		none	
United States	\$685		none		none	

Child Care Expenditures <i>1987 US Dollars</i>	
Data	Notes
\$43	(19/)
\$1,212	(20/)
\$630	(21/)
	(22/)
\$508	
\$1,885	
\$44	(23/)

Note: Child Care Expenditures are separated from the table to stress the data's lower level of comparability (see notes for further explication).

**Table 3**  
**Child Care Policies: Public Supply**

	% Children (0-2) in Publicly Funded Child Care		% Children (3-School-Age) in Publicly Funded Child Care		% Children (Age 5) in Preprimary or School		% Children in Publicly Funded After-School Care	
Country	Data	Notes	Data	Notes	Data	Notes	Data	Notes
Australia	2%		26%		90%		na	
Belgium	20%		95%		99%		na	
Canada	5%	(24/)	35%		98%		na	
Denmark	48%		85%		80%		29%	
Finland	32%	(25/)	59%	(28/)	59%		na	
France	20%		95%		100%		na	
Germany	2%		78%		85%		4%	
Italy	5%		88%		88%		na	
Luxembourg	2%		58%		99%		2%	
Netherlands	2%		53%		99%		na	
Norway	12%		40%		50%		na	
Sweden	32%		79%	(29/)	79%	(29/)	34%	(32/)
United Kingdom	2%		38%	(30/)	100%		<1%	
United States	1%	(26/) (27/)	14%	(26/) (31/)	87%		<1%	(33/)



was available in eight countries. The generosity of these provisions varied from a high of \$1,118 in Belgium to a low of \$198 annually for one child in Finland (in 1987 United States dollars).

For the six countries with complete expenditure data, there is some evidence of a policy tradeoff between direct and indirect expenditures. Those countries with the smallest direct investments, the United States and Canada, were relatively generous in their provision of tax assistance. Tax credits were low or nonexistent in Sweden and Finland, where direct investments were high. The two middle-level countries, France and Norway, had moderate levels of spending through both direct and indirect mechanisms.

An important indicator of government commitment to the provision of child care is the adoption of national legislation that explicitly guarantees access to public or publicly-subsidized care.<sup>8</sup> By the late 1980s, only three of the fourteen countries -- Denmark, Finland, and Sweden -- had adopted legislation that established child care as a right for all (or nearly all) children under the age of six. France guaranteed child care to all children aged two to five; Belgium had extended the promise of universal coverage to younger children (birth to age two) but not to older preschool children.<sup>9</sup>

In the provision of child care for infants, Denmark was the clear leader with 48 percent of children under age three in publicly-supported care. Four additional countries (Belgium, Finland, France and Sweden) also had relatively high rates of public provision, with 20 to 32 percent of children under age three in care. Provision for children under age three fell substantially in the remaining countries, with twelve percent of children in Norway and fewer than five percent of children in the remaining countries enrolled in public or publicly-funded care.

Public child care provisions were more highly developed for preschool children. In four countries (Belgium, Denmark, France and Italy), over 85 percent of children were in public day care or preschools. At the other end of the spectrum, four countries (Australia, Canada, Norway and the United Kingdom) enrolled only 25 to 40 percent of preschool children in publicly-supported care. The United States again stands out as the exceptional case. Although use of all

forms of non-parental care is relatively high in the United States, the heavy reliance on private arrangements and narrowly targeted means-testing for public benefits was evident in the enrollment of fewer than 15 percent of preschoolers in publicly-supported care.

Levels of public child care arrangements for children begin to converge as children age and school enrollment is considered. When child care and school enrollments are combined for five year-old children, virtually all countries made public provisions for 80 to 100 percent of children. Here, only Norway (50 percent) and Finland (59 percent) stand out.

Data on the supply of after-school child care for school-age children were available for only six countries. In this group, Denmark and Sweden were once again the most generous, with 29 to 34 percent of children covered. After-school enrollments were much lower in the other four countries for which data were available; estimates ranged from 5 percent to less than 1 percent in Germany, Luxembourg, the United Kingdom and the United States.

**Public School Schedules.** The start of formal schooling marks an important transition for families and an important shift in the structure of policies supporting mothers' entry into paid labour. All of the industrialized countries provided universal access to government-sponsored schools. Table 4 shows that the details of school scheduling varied.

Entry to school ranged from early enrollment at age five (in Luxembourg, the Netherlands and the United Kingdom) to later enrollment by age six in most other countries. Finland, Denmark and Sweden did not begin compulsory school until age seven. The number of school days per year varied cross-nationally from 175 to 220; this represents a range of 45 additional days or nine additional weeks of school.

Variation was also substantial in the average number of hours per week that children attend school. Most countries appeared to tradeoff school attendance and the length of the

**Table 4**  
**School Policies**

Country	Age of Compulsory School <i>Age (years)</i>		School Hours <i>Hours per Week (34/)</i>		School Year <i>Days per Year</i>		Continuous School Day	
	Data	Notes	Data	Notes	Data	Notes	Data	Notes
Australia	6		35		198	(39/)	yes	
Belgium	6		35		185		yes	
Canada	6		35		180		yes	
Denmark	7		21	(35/)	200		sometimes	
Finland	7		25		190		yes	
France	6		35	(36/)	175		no	(42/)
Germany	6		25		213	(40/)	no	(43/)
Italy	6		27	(37/)	220		sometimes	(44/)
Luxembourg	5		30		220		no	(45/)
Netherlands	5		29		220	(41/)	sometimes	(46/)
Norway	6		30		190		yes	
Sweden	7		30	(38/)	190		yes	
United Kingdom	5		33		190		yes	
United States	6		33		185		yes	

school year. Countries with the longest weekly hours -- Australia, Belgium, Canada, France, the United Kingdom and the United States all kept children in school from 32 to 35 hours each week -- had short to moderate school years.

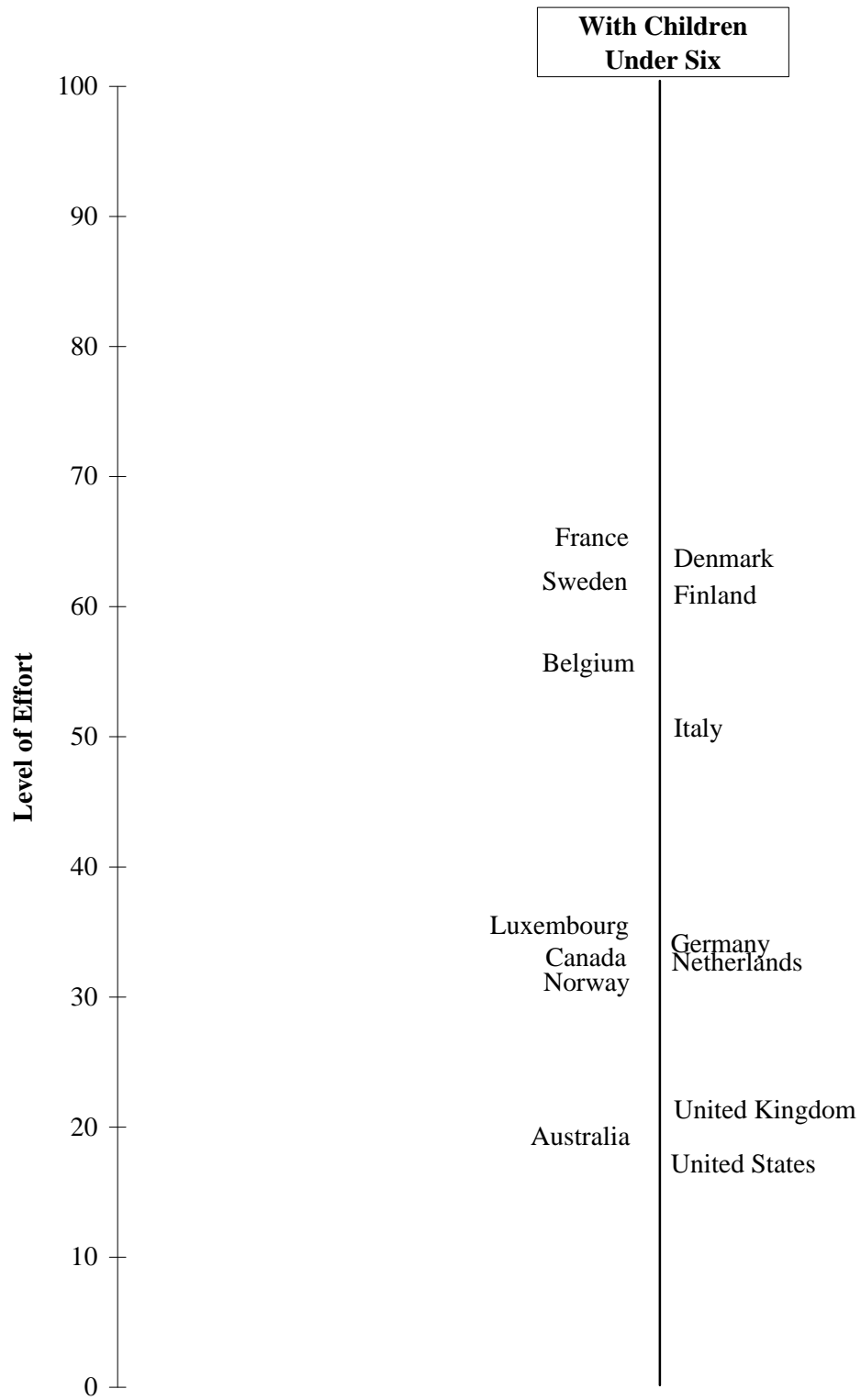
Low weekly school hours were particularly incompatible with employment schedules when school schedules were also discontinuous. Children in two countries, Germany and Luxembourg, were routinely sent home for lunch in the middle of the day. The typical school week in Luxembourg was also disrupted by the scheduling of two half days during the week (supplemented by a half-day Saturday session). In-school supervision for children during the lunch period was inconsistent in Denmark, Italy and the Netherlands. France had one of the longest school weeks (35 hours), but the schedule corresponded poorly to typical adult employment hours because schools were routinely closed on Wednesday.

#### The Indices: Packaging Policies that Support Maternal Employment.

Individual policy indicators paint a complex portrait. It is difficult, however, to reach general conclusions about the intensity of government support for maternal employment. Given the extent to which different policies may substitute and interact, and the importance to employed mothers of continuity in public supports, conclusions about policy achievement based on any single indicator may be misleading. Composite indices provide more parsimonious measures of relative country performance. By considering policies according to the ages of children affected, these indices also provide a more complete and nuanced portrait of policy achievement.

**Policies Aimed at Children Under Age Six.** Figure 1 uses the first index to compare the intensity of government support for employment among mothers with children under the age of six; index values are reported in Table 5. Three loose clusters are revealed. The six countries with policies most supportive of maternal employment are France and three Nordic countries (Finland, Denmark and Sweden), followed by Belgium and Italy. A middle tier of countries

**Figure 1**  
**Policies that Support Employment for Mothers**



**Table 5**  
**Policies that Support Employment for Mothers: Index Values and Ranks**

	Policies for Mothers with Children Under Six		Policies for Mothers with Children Under Three		Policies for Mothers with Preschool-Aged Children		Policies for Mothers with School-Aged Children	
Country	Index Value	Rank	Index Value	Rank	Index Value	Rank	Index Value	Rank
Australia	19.2	13	21.6	13	16.8	14		
Belgium	55.6	5	60.0	4	51.3	6		
Canada	32.4	9	34.7	10	30.1	9		
Denmark	63.7	2	63.9	2	63.5	3	41.9	4
Finland	60.8	4	65.8	1	55.9	5		
France	64.9	1	53.2	5	76.6	1		
Germany	34.1	8	36.2	8	31.9	8	32.6	6
Italy	50.6	6	36.0	9	65.2	2		
Luxembourg	35.2	7	36.3	7	34.1	7	41.4	5
Netherlands	32.0	10	34.0	11	30.1	10		
Norway	31.2	11	41.4	6	20.9	12		
Sweden	61.9	3	62.3	3	61.6	4	55.5	2
United Kingdom	21.6	12	22.0	12	21.3	11	54.6	3
United States	17.1	14	13.6	14	20.7	13	57.0	1

Note: Index scores were calculated using weighted combinations of the relevant indicators as follows:

Policies for Mothers with Children under Six

*(Policies for Mothers with Children under Three + Policies for Mothers with Preschool-Aged Children)/2*

Policies for Mothers with Children under Three

*0.50[Legislated Job Protection + (Coverage)\*( Paid Maternity Leave) + Wage Replacement Rate + Coverage + 0.50(Paternity Benefits)] + Tax Relief for Child Care + Guaranteed Child Care Coverage (0-2) + Percent Children (0-2) in Publicly Funded Child Care*

Policies for Mothers with Preschool-Aged Children

*Tax Relief for Child Care + Guaranteed Child Care Coverage (3-5) + Percent Children (3 - School-Age) in Publicly Funded Child Care + 0.33(Percent Children (Age 5) in Preprimary or School)*

Policies for Mothers with School-Aged Children

*Tax Relief for Child Care + Percent Children in Publicly Funded After School Care + 0.33(Age of Compulsory School) + School Day + School Year + Continuous School Day*

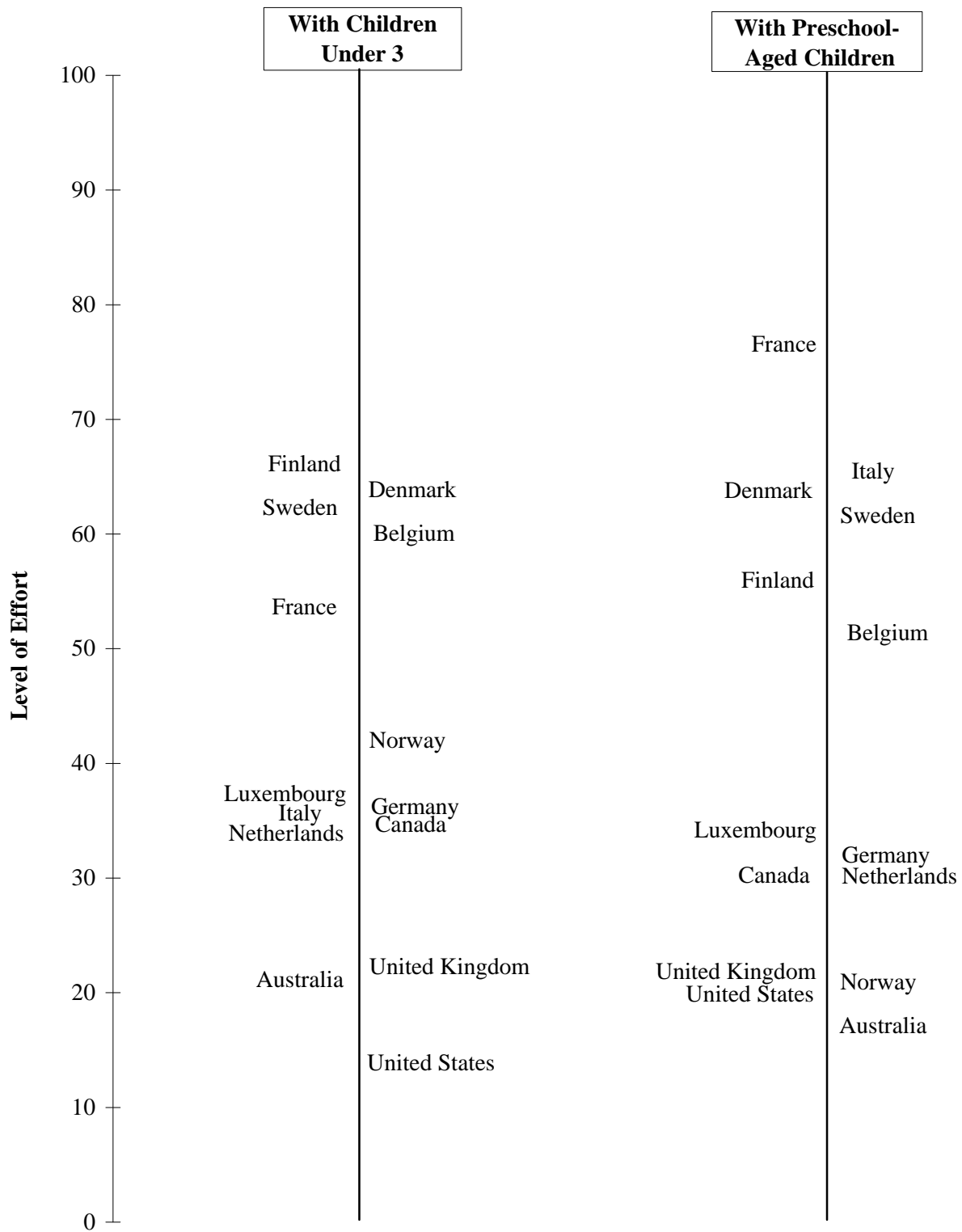
includes a heterogeneous group of five countries -- Luxembourg, Germany, Canada, the Netherlands and Norway. Three English-speaking countries -- Australia, the United Kingdom and the United States -- were the least supportive of maternal employment.<sup>10</sup>

Figure 2 compares the intensity of government support for mothers with infants to public support for mothers with preschoolers. Several conclusions about continuity in employment-supporting policies are suggested.

First, government support for maternal employment was fairly consistent for most (but not all) countries across these age groups. The five countries that were the most generous in provisions aimed at families with infants also provided generous benefits aimed at preschoolers as well. The same is true at the other extreme: the three English-speaking countries with the weakest provisions for infants remain clustered at the bottom in provisions for preschoolers. Women in these three countries had less complete employment protections at childbirth, were less likely to have wage protections during the following months, and had much more constrained access to public child care.

Second, country ranks move *within* the loose clusters described above, suggesting subtle differences in national policy emphases. France, for example, is among the high performers on both indices, but is *more* supportive of employment for mothers of preschoolers. This shift reflects the strong French commitment to nearly universal enrollment of children in *l'écoles maternelle* beginning at age three but somewhat limited parental leaves, the late addition of leave benefits for fathers, and relatively modest rates of public child care provisions for infants. Finland represents nearly the opposite case, shifting from the most generous in support of mothers with infants to a position of poorer performance (relative to other countries) in provisions for preschoolers. This reflects Finnish family policy, as of the middle to late 1980s, that emphasized benefits for families with infants -- through both home care allowances and a child care entitlement. Although there was a larger supply of public child care for preschoolers than for infants, greater demand for care as children aged produced a larger gap between need and supply.

**Figure 2**  
**Policies that Support Employment for Mothers**



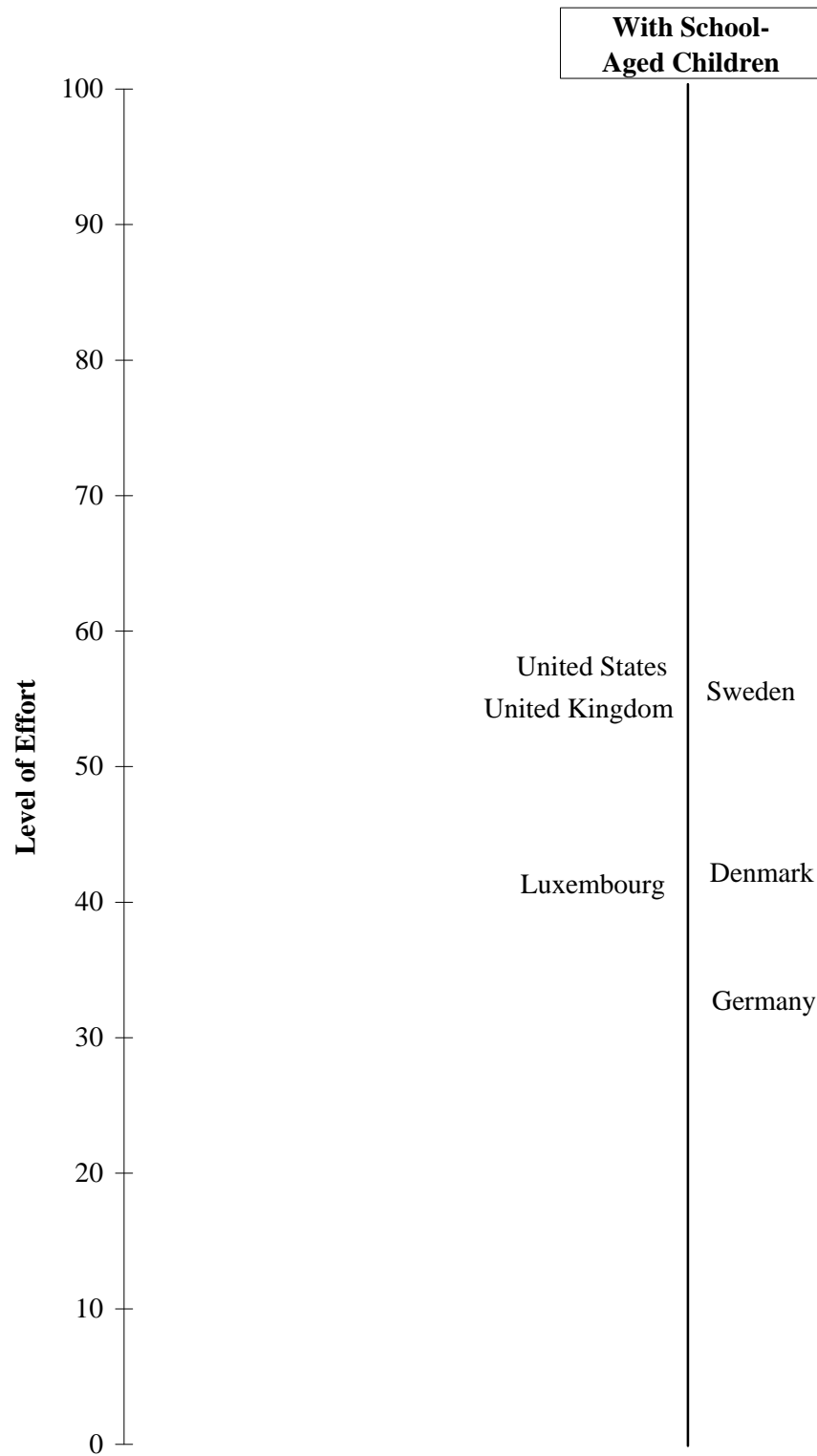


Limited spaces in public child care for preschoolers were allocated on the basis of age and family income.

Finally, more dramatic change in relative performance for two countries -- Norway and Italy -- exemplifies serious discontinuities in policies. Norway declines markedly from providing moderately generous benefits for infants to falling near the bottom in provisions for preschoolers. During the late 1980s, Norway provided extensive and generous maternity leaves for employed women, but those leave benefits were coupled with low levels of public child care provisions for the under-threes, relatively modest investments in child care for preschoolers, and a late start on compulsory education. Although mothers had generous support in the months after childbirth, public support was limited once maternity leaves were exhausted. Italy's family policies represented yet another combination: moderate support for mothers with infants and generous provisions for those with preschool children. Italy provided generous maternity policies and widespread preschool coverage for children over age three, with a significant gap in public child care for infants and toddlers. During the period between the end of maternity benefits and the beginning of public preschool at age three, Italian mothers faced significant barriers to employment.

**From the Preschool to the School Years: Policies for Families with Children Aged Six to Twelve.** Figure 3 depicts relative country performance on policies for mothers with school-age children in the six countries for which complete data were obtained. Most salient here is the dramatic shift in the composition of the more highly performing group: the three countries with the most employment-supportive policies on this index are the United States, Sweden and the United Kingdom. The United States and the United Kingdom score highly due to long weekly school hours and continuous and regular school schedules; the United Kingdom also began compulsory school at a young age (age five) and kept students in school for a relatively long portion of the year. Sweden delayed compulsory schooling until age seven and had somewhat

**Figure 3**  
**Policies that Support Employment for Mothers**



shorter school hours, but the potential disadvantage of these policies for employed mothers was offset by extensive public after-school care.

The three lower-scoring countries for this age group -- Denmark, Germany and Luxembourg -- had diverse policy packages. Average total weekly school hours in Denmark were among the lowest in these fourteen countries and the age of compulsory schooling was seven. The resultant downward pressures on maternal employment options were partially offset by relatively high levels of after-school care. Luxembourg and Germany exemplify particularly difficult policy combinations with respect to maternal employment. In these countries, the combination of irregular school hours with low levels of public after-school care resulted in hours of coverage that were substantially at odds with parental employment schedules, especially full-time schedules.

#### Employment Support as a Component of the Family Policy Package.

The fourteen countries in this study varied dramatically in the generosity and continuity of public support for maternal employment. These policies capture an important dimension of family policy, but they represent only one component of the full package of benefits targeted on families with children. Another crucial form of government support is cash transfers provided directly to parents.

Figure 4 analyzes the relationship between family policy benefits provided through support for maternal employment (the index of policies relevant to mothers with children under age six) and through direct cash assistance (spending on child allowances and means-tested assistance). Twelve countries for which complete data were available are compared.

About half of these countries made comparable commitments on both dimensions of family policy. Denmark, France, and Sweden represent generous welfare states with policies that provided extensive support for the employment of mothers and a generous system of direct transfers to families. Germany and Norway represent the middle level on both dimensions:

**Figure 4**  
**Policies that Support Employment for Mothers**  
**By Family Transfers Per Child Under Age 15 (1984)**  
(In 1980 U.S. Dollars, converted with OECD PPP series)

Family Transfers Per Child Under Age 15	<b>High</b> (>\$800)	United Kingdom	Netherlands	Denmark France Sweden
	<b>Medium</b> (\$500-\$799)	Australia	Germany Norway	
	<b>Low</b> (\$200-\$499)	United States	Canada	Finland Italy
		<b>Low</b>	<b>Medium</b>	<b>High</b>

Policies that Support Employment for Mothers with Children under Age Six

Notes: Comparable expenditure data for Belgium and Luxembourg not available.

Source for transfer data is Kamerman and Kahn 1991b.

moderate and inconsistent support for maternal employment and medium levels of support through direct family transfers. The United States was consistent in its *lack* of support for families; direct income transfers were low and government support for mothers' employment was extremely weak by international standards.

Another six countries represent mixed models of family support. Two extremes are notable. The United Kingdom represents a “low employment-support/high cash transfers” combination in which child care and parental leave policies were limited, but a combination of universal and means-tested transfers provided relatively generous cash assistance to families. Finland and Italy represent the contrasting “low cash transfers/high employment-support” package of family benefits: a strong commitment to child care and maternity leaves but relatively low levels of direct income assistance.

## CONCLUSIONS

These indices reveal cross-national variation in public policies that support maternal employment, both when considered alone and as part of a larger package of family support. This policy variation is of substantive interest, because the adequacy of these policies affects both the strength of women's labor force attachments and the economic well-being of families. The patterns of cross-national variation are also of interest theoretically because they challenge prevailing models of welfare regime types.

Labor market research indicates that women's employment rates and their patterns of employment vary considerably across these same industrialized countries. OECD (1994) reports, for example, widespread variation, with respect to women's ages, in labour force participation rates in the late 1980s. In Finland, France and Sweden, women's participation patterns resembled men's: their participation rates rose and fell smoothly with age, i.e., in an inverted U-shape. In Germany and the Netherlands, in contrast, women's participation rates were highest among women in their mid-twenties and they fell steadily from that point; this “left-peak” pattern

diverged markedly from the male pattern in these countries. In Australia and the United Kingdom, women's rates rose, then fell (among women in their late-twenties), and then rose again, in an "M-shaped" pattern that was once again unlike that of their male counterparts.

These data suggest that women's labour market behaviour varies across countries in response to the addition of children into their lives. Other researchers, using multivariate designs, also report that the magnitude of the negative effect of having young children on mothers' labour supply varies across the industrialized countries (Gornick 1994; Knudsen and Peters 1994; Phipps 1993). The role that public policies play in shaping these labor supply responses remains largely unmeasured. The policy indices presented in this paper provide an improved measure of the policy variations that may underlie cross-national variation in mothers' employment patterns.<sup>11</sup>

For women with children below school-age, the most developed policy package combined job protection and wage replacement at the time of childbirth, provisions for the care of infants through extended leave and/or publicly subsidized child care, and support for the care of children over age three in the form of public child care and/or early enrollment in public school. In the middle-to-late 1980s, only five of the fourteen countries in this study had reasonably complete and continuous provisions for this age group. In these countries -- Belgium, Denmark, Finland, France and Sweden -- mothers would be able to enter and remain in full-time paid work with minimal career disruptions and earnings losses due to child care responsibilities. Labour supply theory and prior research would lead to a prediction of higher levels, and more continuous patterns, of maternal employment in these countries; the OECD data suggest an employment picture along these lines.

In the remaining countries, government provisions were far more limited and/or discontinuous. In some countries, such as Germany and the Netherlands, moderately generous maternity leave policies allowed women to leave the workplace at the time of childbirth without severing their employment, but the lack of child care left them with few options for care after leaves were exhausted. In these countries, women with children might be expected to

accommodate their family responsibilities by reducing their hours of employment or by exiting employment altogether during the years between the end of maternity leaves and the beginning of reliable child care through public centers or public schools. The "left-peak" pattern of women's participation rates, reported by OECD, is consistent with a story of inadequate supports for women who might otherwise choose to combine paid work and childrearing.

In a final group of countries, the English-speaking countries in this study, government benefits were altogether limited. Without job protections and access to leaves, many women workers faced stiff penalties for work absences due to childbirth; without publicly subsidized child care, many had few viable alternatives to full-time maternal care of children. It is in these countries that we would expect to observe the greatest disruptions in employment among mothers with young children, i.e., where we expect to see employment patterns that are highly differentiated by children's ages. The "M-shaped" pattern seen in some of these countries -- indicating a pattern of exit and re-entry -- suggests that women in these countries were responding to inadequate supports by temporarily exiting the labor force.

The cross-national picture was very different with respect to policies for mothers with school-aged children. There is evidence that countries with very strong commitments to policies supporting maternal employment when children are young -- such as Sweden -- continue this support through a combination of continuous school days and after-school child care. Much more notable is the change in relative performance of the United States and the United Kingdom, which emerge as strong performers with respect to school-aged children. Early school enrollments, long school days and years are consistent with the historical commitment to free public education in these countries. Provision of many hours of *de facto* child care may be an important byproduct of these policies, and might enable mothers of older children to enter the labor market and/or to extend their hours of paid work.

Policies that increase employment options directly enhance mothers' labor market opportunities. These policies also have important and frequently overlooked implications for the

economic well-being of families. All of the industrialized countries in this study have social insurance and social assistance programs designed to reduce the risk that families will fall into poverty. In many, these programs have aimed to protect, augment, or replace the earnings of a male breadwinner -- e.g., through unemployment insurance, child benefits, or lone parent allowances. With the growing importance of *women's* earnings to household income -- in both dual- and single-earner families -- policies affecting mothers' employment are an increasingly important component of anti-poverty policy. Dramatic cross-national diversity in the economic wellbeing of both families and children has been well-documented, and the role that income transfers play in reducing poverty rates is well-understood (Rainwater and Smeeding 1995). Much less appreciated is the effect of policies that support mothers' employment on reducing poverty among families. The indices presented in this paper permit more complete analyses of family benefit packages that combine both types of policies.

As shown in Figure 3, a few of the countries included in this study packaged generous cash transfers to families with extensive supports for mothers' employment. Evidence of the effectiveness of this package as a *poverty-reduction* strategy can be found in the low levels of post-transfer child poverty, reported by Rainwater and Smeeding (1995) for the mid-to-late 1980s, in Denmark (3%), France (7%), and Sweden (3%) . The opposite extreme -- meager cash transfers combined with few supports for continuous maternal employment -- likely contributed to exceptionally high levels of poverty among children in the United States (22%) during this period. More complex policy interactions may be observed in those countries that had "mixed" packages of family supports. Several of these countries had child poverty rates in the middle of the range seen in the industrialized countries -- including Australia (14%), Canada (14%), Italy (10%), and the United Kingdom (10%) (Rainwater and Smeeding 1995) -- suggesting that the two policy strategies may work in tandem to reduce family poverty.

This study also suggests a third direction for future empirical work -- the integration of policies related to women's employment into research on welfare state regimes. As noted earlier,



Esping-Andersen's (1990) tripartite welfare state typology has dominated comparative analyses of the welfare state in recent years. His work catalyzed a wave of feminist critiques of mainstream welfare state research and it has provided a focal point for scholars seeking to integrate gender into research on the determinants and effects of social policies. One of the most intriguing, yet least developed, components of Esping-Andersen's work is the proposition that each welfare state model is associated with a distinct labour market trajectory for women. While a few country cases have been analyzed, neither Esping-Andersen nor his critics have used cross-national data from a large sample of industrialized countries to systematically assess the extent to which each welfare state model supports the employment of mothers.

The findings from this paper provide the outline of a new cross-national policy portrait. The results reported here suggest that Esping-Anderson's clusters fail to cohere with respect to policies that affect women's employment. As seen in Figure 1, the *social democratic* regime type disaggregates as Norway diverges from the other social democratic countries (Denmark, Finland and Sweden). The *conservative* countries reveal little commonality -- France and Germany provide an especially sharp contrast -- and Canada pulls away from the other *liberal* countries (Australia, the United Kingdom and the United States).<sup>12</sup> These findings should motivate further empirical research aimed at reassessing the dominant welfare state typology by considering the interplay between policy and women's employment patterns. Ideally, new research will focus on both cross-cluster and intra-cluster variation in policy packages and in women's employment outcomes.

In conclusion, this paper finds significant cross-national variation in government policies that are understood to influence women's employment decisions by increasing viable alternatives to full-time maternal childminding and thus reducing barriers to employment. The extent to which women with children have institutional supports that enable them to choose the option of employment, in turn, shapes both gender equality and the economic wellbeing of families with children. Despite their importance, these policies -- and the economic, political and social

outcomes associated with them -- remain poorly understood. Existing cross-national variation in the architecture and intensity of policies that support maternal employment provides a rich opportunity and an important challenge for comparative scholarship and policy analysis.

## ENDNOTES

- 1 The term "family policy" traditionally has been broadly inclusive. As Kamerman and Kahn (1978) explain: "[F]amily policy may be defined as a field in which certain objectives regarding the family are established (e.g., large families, healthier children, less financial burden attached to raising children, more equality for women, well-cared for children, and so forth), and various policies and measures are developed to achieve these goals (p. 5)." Many scholars continue to cast a wide net when comparing family policies; for example, Baker (1996), Kamerman and Kahn (1978) and Gauthier (1991) include in their research on family policy, income transfers, protective laws, and a range of services, including but not limited to policies that support maternal employment.
- 2 This paper does not consider policies that potentially affect the employment of fathers, for two reasons. First, a large body of empirical research indicates that while women's participation rates, their hours worked, and their wages, decrease with the presence of children, men's employment patterns and their wages are largely insensitive to their status as parents. Throughout the industrialized countries, employment, specifically full-time employment, remains the norm for working-age men, whether or not they have children. Second, women continue to contribute the majority of household labor and, in general, to maintain primary responsibility for childrearing in all of the industrialized countries; gender-differentiated employment patterns indicate that tradeoffs between paid work and family work remain substantially greater for mothers than for fathers.
- 3 For a presentation of the microeconomic model of female labor supply and its underlying assumptions, see Berndt 1991; Blau and Ferber 1992; Heckman 1993; Killingsworth 1983; or Killingsworth and Heckman 1986.
- 4 Most of these are produced by major international organizations, including the Council of Europe, the European Commission (EC), the International Labor Office (ILO) and the Organization for Economic Cooperation and Development (OECD).
- 5 For more information on the Luxembourg Income Study (LIS) microdata, see the "LIS/LES Information Guide" (de Tombeur 1995).
- 6 The family policy data that were gathered for this paper are available via FTP as part of the larger Luxembourg Income Study (LIS) Institutional Database. The Institutional Database, which serves as a companion to the LIS micro-databases, includes descriptive information on the primary tax and transfer programs in the LIS countries. For more information, see LIS Working Paper #7 (de Tombeur 1995).
- 7 Expenditures data are adapted from Table 5 in Kamerman and Kahn's Government Expenditures for Children and Their Families in Advanced Industrialized Countries, 1960-1985 (1991b). These expenditure data were converted by OECD analysts into 1980 United States dollars using purchasing power parities. For this paper, expenditure figures were recoded into categories of low (\$200-\$499 per child per year), medium (\$500-\$799) and high (over \$800) spending.
- 8 The adoption of child care guarantees has several possible effects, including: (1) communicating to mothers that the state is committed to assisting them in balancing employment and childrearing, (2)

increasing the total supply of child care, and (3) signaling to employers that mothers of young children will be reliable employees, thereby reducing employers' reluctance to offer women opportunities for training and advancement.

- 9 Two other countries had developed policy in this area, but with such weak provisions that no entitlement to employment-supporting child care can be inferred. Italy had extended its guarantee of child care down to children under three, but with a service target so low (5 percent) and so poorly funded as to be meaningless. Germany had an entitlement for preschool children, but the programs to which it applied -- part-day, part-week preschool -- were poorly attuned to the working schedules of employed parents.
- 10 An earlier study, by Wilensky (1990), included the construction of two indices -- for parental leave and child care benefits -- for a sample of OECD countries during the period 1976-1982. Overall, Wilensky's index values on leave and child care are consistent with parallel indicators contained in this study. Notably, this study scores Canada more highly (relatively) on child care provision and Norway much lower; these discrepancies can be attributed to the inclusion here of tax relief as well as to policy changes over time. In both cases, the use here of continuous scoring and the inclusion of a larger number of variables resulted in more variation across countries. For further information about the relationship between these two sets of indices, please contact the first author. Harold Wilensky graciously provided information about his index construction methods and results.
- 11 See Gornick, Meyers and Ross (1996) for an analysis that links these indices with mothers' labor market outcomes, specifically with employment patterns that are differentiated by the age of the youngest child.
- 12 Gustafsson (1994) reaches the opposite conclusion -- that child care policy patterns can be predicted from Esping-Andersen's typology, but her analysis, based on three countries, is clearly preliminary.

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## **APPENDIX 1**

### **Index Construction**

#### Index Components.

The first index, *Policies that Support Employment for Mothers with Children under Six*, comprises two component indices. One, *Policies that Support Employment for Mothers with Children from Birth to Three*, combines eight indicators measuring provisions that protect women's employment and wages at the time of childbirth and that provide alternatives to maternal care for infants and toddlers. Four indicators of the generosity and coverage of maternity leaves are included and weighted by one-half to reflect the limited period of time that they are available (typically the first 12 to 18 months after childbirth). The generosity of national child care provisions is measured through the inclusion of indicators for a national child care entitlement, the generosity of child care tax credits or deductions, and the supply of public child care for children under three. A final indicator, whether any leave is available to fathers (coded as yes or no), is included as a measure of both the generosity of parental leave and the availability of non-maternal child care and weighted by half to reflect its indirect relationship to mothers' employment decisions.

The other component of the first index, *Policies that Support Employment for Mothers with Preschool-Aged Children*, combines four indicators that reflect government efforts to increase the supply of public child care. Tax expenditures and the existence of a child care entitlement for children between three and five are included, along with enrollments in public or publicly-subsidized child care for this age group. To adjust for the impact of the age of school enrollment on parents' need for child care, a fourth variable is included to measure the percentage of five year old children enrolled in publicly-supported child care, preprimary, or primary school. This measure was weighted by one-third to reflect the fact that five year old children make up approximately one-third of the children in this age group. The final index measures *Policies that Support Employment for Mothers with School-Aged Children*. The importance of the correspondence of school schedules to regular employment hours dictated the inclusion of

measures for the age of compulsory schooling and the length and continuity of public school schedules. The compulsory school-age variable is weighted by one third since variation in school starting-age affects only a fraction of school-age children. Because employed parents also need child care during the hours when school is not in session, the index also includes measures for tax expenditures and enrollments in public after-school care. Due to severe limitations in data on after-school enrollments, it was possible to include only six of the original countries in this index.

### Methodological Considerations.

Measures of national policy intent, performance and/or achievement are generally aggregated for comparative analyses using one of three approaches: (1) individual variables are standardized and combined additively to form composite scales, with or without weighting; (2) country values are ranked and the ranks are summed or averaged, across variables; or (3) values are grouped to form qualitative typologies.

The first option involves standardization, for example, by calculating z-scores or converting all values to proportions (e.g., Estes 1984). Standardization has a number of advantages for data aggregation. Most obviously, by converting all data to a single metric (e.g., standard deviations from the mean), diverse measures of a single underlying phenomenon -- in our case, employment-enabling public policy -- can be added together to produce a cumulative score which captures both the magnitude and the distribution of individual components (Ragin 1994). Because standardized scores are linear transformation of raw data, however, this approach assumes that included data have meaningful intervals (Allen and Yen 1979). If the data do not have meaningful intervals (e.g., they are simply ordinal) composite indices based on combining scaled variables will be difficult to interpret.

Since policy data do not always lend themselves to the use of z-scores or other standardization techniques, some cross-national researchers reduce all indicators to country ranks. This allows consistent treatment of data that were originally measured using a combination of continuous and categorical values. Items may be ranked separately, based on a theoretically

derived and imposed scale or based on the value of the data themselves (actual values or standard deviations from the mean). A composite index can then be constructed by summing or averaging ranks across individual indicators. If ranks on multiple items are combined into an aggregate score, similar assumptions must be made about ordered values that measure intensity on the same underlying continuum. Because ranking does not impose any form of standardization on individual items, however, assumptions about the underlying distribution of values can be relaxed. This method has the corresponding disadvantage of losing important information about the dispersion of data and variance in the individual and aggregated values.

When assumptions about the continuous or ordinal structure of measures are not warranted, scholars often rely on a third option -- the use of descriptive typologies. Typologies can incorporate both ordered and unordered categorical data. Because they do not require assumptions about either ordered values or normally distributed data, typologies can be useful for developing complex, non-linear classification schemes (Mayer and Greenwood 1980). Although descriptively rich, typologies lose considerable information about both the range and the magnitude of values in the separate measures, and about relative performance using composite measures.

### Standardization Using Proportions.

We decided to standardize the indicators, or variables, presented in Part II, so that we could add them in various combinations to construct composite indices. By standardize, we refer to the process of adjusting all variables such that both their magnitudes and their distributions are meaningfully comparable. Because standardization and aggregation involve decisions that can have substantial implications for the interpretation of results, the following section summarizes in some detail the core decision that we made with respect to standardization.

Two common techniques for standardizing variables with different original metrics are (1) the use of z-scores or (2) the use of proportions relative to variable-specific maximums (e.g., Estes 1984). The common z-score approach makes strong assumptions, i.e., that untransformed

data have meaningful intervals and that they are normally distributed in the underlying population (Allen and Yen 1979). If these assumptions are not met, standardization using z-scores may lead to spurious conclusions driven by unusual distributions in the sample data.

Based on our assessment of the analytic questions and the data for this study, we chose to construct additive scales using a set of indicators, each of which are standardized as proportions of variable-specific maximum values. We chose to standardize using proportions of specified maximum values, rather than using z-scores, because it allows a more intuitive interpretation of values (as performance relative to an indicator of maximum effort) and makes fewer assumptions about interval measures or the normality of the underlying distribution. The variables selected for inclusion in the indices included continuous and ordered categorical data, but we were willing to assume that the intervals for the ordered variables have a theoretically meaningful interpretation. By comparing each country's performance against an absolute rather than relative measure of maximum performance, we are able to characterize national policy efforts and achievements both individually and comparatively. Furthermore, we leave open the possibility of adding additional countries in future iterations of the indices.

Standardization of each measure against maximum performance required careful specification of minimum and maximum values for each variable. Table 1 summarizes the basis for standardizing each variable. In most instances, these values were obvious: e.g., child care enrollments, wage replacement rates, and maternity benefit coverage could all be meaningfully measured as percentages. Other variables required specification of maximum effort on more theoretical grounds. For most, we were able to identify a logical value: e.g., weeks of maternity leave as a percentage of a full year (52 weeks), school hours as a percentage of a full-time work week (40 hours), or child care guarantees as ordered values from none (0) to partial (.5) or full coverage (1.0) of the age group. A final set of variables required specification of a maximum based on observed performance levels: e.g., tax relief is measured as a fraction of U.S. \$2,600, which is our calculation of the minimum annual cost for full-time private child care in the United States in 1987.

To gauge the impact of methodological choices on our conclusions, we conducted sensitivity analyses for all three indices to compare conclusions about comparative performance when individual indicators were aggregated using three methods: 1) z-scores, 2) standardization using proportions, and 3) unstandardized ranking. For nearly all combinations of variables, conclusions about relative country performance were not sensitive to the aggregation method.



**Appendix 2**  
**Policy Data: Years of Reference**

	<b>Current</b>	<b>Anticipated</b>
<b>Australia (AS)</b>	1986	1990
<b>Belgium (BE)</b>	1985	1992
<b>Canada (CN)</b>	1987	1991
<b>Denmark (DK)</b>	1987	1992
<b>Finland (FI)</b>	1987	1991
<b>France (FR)</b>	1984	1989
<b>Germany (GE)</b>	1984	1989
<b>Ireland (IR)</b>	1987	1992
<b>Italy (IT)</b>	1986	1991
<b>Luxembourg (LX)</b>	1985	1991
<b>Netherlands (NL)</b>	1987	1991
<b>Norway (NW)</b>	1986	1991
<b>Sweden (SW)</b>	1987	1992
<b>United Kingdom (UK)</b>	1986	1991
<b>United States (US)</b>	1986	1991

**Appendix 3**  
**Eighteen Measures of Policies that Support Employment for Mothers**

<b>Public Parental Leave Policies</b>	
<b>Measure/Definition</b>	<b>Metric/Notes</b>
<b>Legislated Job Protection</b> Legislation that guarantees that women can retain their jobs at the time of child birth.	(yes/no)
<b>Paid Maternity Leave</b> Weeks during which women are entitled to full or partial replacement of wages at the time of childbirth.	(weeks)
<b>Wage Replacement Rate</b> Average rate at which wages are replaced during the maternity leave period (above).	(percent of wages)  Where rate varies with time, we calculate a weighted average.  Excludes maternity grant, birth grant, and lump-sum.
<b>Coverage</b> Percentage of employed women eligible for paid maternity leave under public or publicly mandated private maternity benefits.	(percent of employed women)  Excludes maternity grant, birth grant, and lump-sum.
<b>Extended Leave</b> Additional weeks of job-protected leave (paid or unpaid) to which women are entitled <u>after the exhaustion of</u> any paid maternity leave.	(weeks)
<b>Paternity Benefits</b> Fathers entitled to any parental leave.	(yes/no)

**Appendix 3**  
**Eighteen Measures of Policies that Support Employment for Mothers**

<b>Public Support for Child Care</b>	
<b>Measure/Definition</b>	<b>Metric/Notes</b>
<b>Child Care Expenditures</b> National and local government public expenditures for substitute child care. Measure <u>excludes</u> tax expenditures (as below) and family/child allowances.	(1987 U.S. Dollars)  Expenditures for public child care programs and subsidies to private child care providers (national, local, and total) per child aged 0 to school age.
<b>Tax Relief for Child Care</b> Tax exemptions or tax credits on national income taxes which are provided specifically for substitute care for children.	(1987 U.S. Dollars)  Maximum benefit which is available to a family with a full-time worker earning the average primary worker (APW) wage and with one child under 6.
<b>Guaranteed Child Care Coverage (0-2)</b> Ages of children from birth to third birthday guaranteed access to child care through national legislation or executive policy.	(ages covered)  Countries are considered to have a guarantee when legislation or policy sets targets whether or not full coverage has been achieved.
<b>Guaranteed Child Care Coverage (3-5)</b> Ages of children from three to sixth birthday guaranteed access to child care through national legislation or executive policy.	(ages covered)  Countries are considered to have a guarantee when legislation or policy sets targets whether or not full coverage has been achieved.

**Appendix 3**  
**Eighteen Measures of Policies that Support Employment for Mothers**

<b>Public Supply of Child Care</b>	
<b>Measure/Definition</b>	<b>Metric/Notes</b>
<p><b>Percent Children (0-2) in Publicly Funded Child Care</b></p> <p>Percent of children from birth to third birthday enrolled in public child care centers or publicly subsidized private arrangements.</p>	<p>(percent of children aged 0-2)</p> <p>Includes enrollments in all forms or regulated care: child care centers, family child care, preschool and nursery schools. Excludes: nannies, playgroups, and baby-sitters regardless of funding source.</p>
<p><b>Percent Children (3-School-Age) in Publicly Funded Child Care</b></p> <p>Percent of children between the ages of 3 and compulsory school age who are enrolled in public child care centers or publicly subsidized private arrangements.</p>	<p>(percent of children aged 3-school age)</p> <p>Includes enrollments in all forms or regulated care: child care centers, family child care, preschool and nursery schools. Excludes nannies, playgroups, and baby-sitters regardless of funding source.</p> <p>In the three countries with compulsory school at age five, this measure includes enrollments for 3 and 4 year old children only.</p>
<p><b>Percent Children (Age 5) in Preprimary or School</b></p> <p>Percent of children age 5 enrolled in preprimary or school programs</p>	<p>(percent of 5 year old children)</p>
<p><b>Percent Children in Publicly Funded After-School Care</b></p> <p>Percent of children under 12 who are enrolled in publicly funded after-school care. Includes children who have access to care in extended-day school programs.</p>	<p>(percent of children under 12)</p>

**Appendix 3**  
**Eighteen Measures of Policies that Support Employment for Mothers**

<b>School Policies</b>	
<b>Measure/Definition</b>	<b>Metric/Notes</b>
<b>Age of Compulsory School</b> Age of compulsory education.	(age in years)
<b>School Day</b> Hours in typical public school schedule	(hours per week)  Includes lunch period if supervision is provided. Represents average school day, without adjusting for part-day Saturday schedules. If school schedules vary with children's ages, the schedule for the youngest children of compulsory school age is used.
<b>School Year</b> Days per year in the public school calendar.	(days per year)  School days per week multiplied by weeks in the school year (excluding scheduled holiday periods).
<b>Continuous School Day</b> Typical public school schedule includes supervision of children during the lunch break and is continuous from Monday through Friday.	(yes/no)

## Appendix 4

### Notes to Tables 2, 3, and 4

- 1/ Since 1986, Federal public employees (and some state employees) have been entitled to 12 weeks of paid leave (ILO, 1994; Baker, 1996).
- 2/ Italy Maternity Leave: 2 months prior and 3 months after birth = 20 weeks @ 80% wage replacement rate (OECD, 1990b; Expert).
- 3/ UK 18 weeks paid maternity leave does not apply to women with less than 2 years with the same employer (see note 9) (OECD, 1990b).
- 4/ Pregnancy Disability Act of 1978 mandated coverage of pregnancy as a disability by all employers offering insurance. Five states (CA, HI, NJ, NY, RI) had T.D.I. (laws protecting against loss of income in case of short-term medical disability (Kamerman, 1991a). Average length of coverage was 6 weeks.
- 5/ Wage replacement rate for public employees entitled to leave (ILO, 1994; Baker, 1996).
- 6/ Belgium wage replacement rate: 82% for 4 weeks plus 75% for 10 weeks = 77% (Moss, 1990).
- 7/ UK wage replacement: 90% for 6 weeks plus 25% for 12 weeks = 46% (OECD, 1990b).
- 8/ Average wage replacement rate for women with disability coverage for pregnancy (see note 5).
- 9/ Estimate of female workforce in federal employment based on the LIS microdata (see note 1).
- 10/ Due to several restrictions in benefits, including minimum wage levels, and exclusion of women who had less than 2 years of continuous employment with the same employer (EC, 1986).
- 11/ Percentage of female labor force that reside in the 5 states that had T.D.I. laws protecting against loss of income in case of short-term medical disability (see note 5) (Kamerman, 1991a).
- 12/ In Australia 52 weeks is maximum job protection leave. For the small number of women entitled to public maternity benefits, maternity leave weeks must be subtracted from the extended leave total (Baker, 1996).
- 13/ Netherlands parents of child under 4 can work shorter week (minimum of 20 hours.) for a period of 6 months.; wages are paid for hours worked (OECD, 1990b).
- 14/ Sweden Extended Parental Leave: Parents have a right to unpaid leave until the child is one and a half years old, thereafter parents can work 75% of full-time until the child is 8 (Expert).
- 15/ Italian fathers are eligible for leave only when the mother is a wage earner and she renounces part of her optional extended leave in favor of her husband (Expert).
- 16/ Denmark has no age-specific legislation, however, "Legislation under the Social Security Act in 1976 and subsequent amendments obligate

## Appendix 4

### Notes to Tables 2, 3, and 4

public authorities 'to make available the required number of day care facilities for children and young people.' (Kahn and Kamerman, 1994)

17/ As of 1972, Finland municipalities were to provide public day care as needed for all children under 7 (Expert).

18/ While there is legislation guaranteeing child care for children under three the legislated target coverage rate and actual public provision was a low 5% of children in this age group.

With such a low target the public child care guarantee is essentially non-existent. Thus, we coded Italy guaranteed child care (0-3) as none (Moss, 1990; Expert).

19/ Two times the Federal portion of Canada Assistance Plan under which subsidies are given to the provinces for child care. Generally the federal portion equals 50% of total expenditures (Expert)

20/ Finland Child Care Expenditures: 2.069 billion FMK (national) + 2.428 billion FMK (local) = 5.070 billion FMK total (Expert).

21/ France Child Care Expenditures: 3.17 billion US\$ national + 2.52 billion US\$ in local public expenditure = \$5.69 billion US\$ (OECD, 1990b).

22/ National spending for kindergarten only in Italy : 2.907 Lira. Local expenditure varies and is unknown. We do not include this figure in the chart since it covers only a small portion of children under 15 years old and the figure represents only a fraction of public spending on child care (Expert).

23/ US Child Care Expenditures = 1,097.5 mil (state and federal Title XX) + 1,053.4 mil (State and federal Head Start) + 30 mil (federal Job Training Partnership Act) + 0 Work Incentive Program = \$2,180.9 million (Robins, 1988; Blank, Wilkens and Crawley, 1987).

24/ Canada 0-2 enrollment: 10% of all children from 0-2 in day care and approximately 50% of all care subsidized (Woodill, et al., 1992).

25/ Finland (33,000 1-2 year olds in family day care *plus* 25,000 1-2 year olds in center or preschool *plus* 315 0-1 year olds in family day care *plus* 315 0-1 year olds in center or preschool) divided by (122,000 1-2 year olds plus 63,000 0-1 year olds) = 32% enrolled in family day care or center or preschool (Kamerman and Kahn, 1991b).

26/ US 0-6 population = 15,944,000 (9,522,000 under 3; 6,422,000 aged 3-5); approximately 5% of children under 6 receive Head Start and other free care ( $5\% \text{ times } 15,944,000 = 797,200$ ).

Of children enrolled in Head Start: 3% are under three and 97% are aged 3-5 (28% age 3; 62% age 4; 7% age 5). Estimated number of children under three who receive Head Start and other free care ( $3\% \text{ times } 797,200 = 23,916$ ; estimated percent of children under three ( $23,916 \text{ divided by } 9,522,000 = 0.25\%$ ). Estimated number of children aged 3-5 who receive Head Start or other free care ( $97\% \text{ times } 797,200 = 773,284$ ; estimated percent of children aged 3-5 ( $773,284 \text{ divided by } 6,422,000 = 12.04\%$  (Hofferth, 1990 and Behrman, 1995).

## Appendix 4

### Notes to Tables 2, 3, and 4

- 27/ US 0-2 enrollment: 0-2 population = 9,522,000 (38% 0-1 and 62% 1-2); 18.6% of 0-1 year olds and 28.8% of 1-2 year olds are in DC centers or FDC ( $18.6\% \text{ times } 38\% \text{ plus } 28.8\% \text{ times } 62\%$ ) = 25%. An estimated 3.3% of parents using paid care received government subsidies (other than tax credits) ( $25\% \text{ times } 3.3\%$ ) = 0.8% children 0-2 in publicly subsidized child care. [These figures are based on household survey data and may underestimate subsidies]. Total enrollment in publicly funded child care is the estimate of children under 3 receiving Head Start and other free care (see note 25) *plus* the estimate of publicly subsidized care ( $0.25\% \text{ plus } 0.8\%$ ) = 1.05% (Hofferth, 1990).
- 28/ Finland (63,100 3-7 year olds in family day care *plus* 82,400 3-7 year olds in center or preschool) *divided by* (247,000 3-7 year olds) = 59% enrolled in family day care or center or preschool (Kamerman and Kahn, 1991b).
- 29/ Enrollment in day care institutions and municipal "day care mothers" (Hantrais, 1994).
- 30/ Does not include 5 year old school enrollment (Moss, 1990).
- 31/ US 3-5 enrollment: 3-5 population = 6,422,000 (71% 3-4 and 29% 5); 47.8% of 3-4 year olds and 36.7% of 5 year olds are in DC center or FDC ( $47.8\% \text{ times } 71\% \text{ plus } 36.7\% \text{ times } 29\%$ ) = 45% in care (not kindergarten). An estimated 3.3% of parents using paid care received government subsidies (other than tax credits) ( $45\% \text{ times } 3.3\%$ ) = 1.5% in publicly subsidized child care. [These figures are based on household survey data and may underestimate subsidies]. Total enrollment in publicly funded child care is the estimate of children aged 3-5 receiving Head Start and other free care (see note 25) *plus* the estimate of publicly subsidized care ( $12.04\% \text{ plus } 1.5\%$ ) = 13.54% (Hofferth, 1990).
- 32/ US After School Day Care: 6-12 population = 10,675,000 (65.4% 6-9 and 34.6% 10-12); 16.8% of 6-9 year olds and 5.1% of 10-12 year olds are in DC or FDC ( $16.8\% \text{ times } 65.4\% \text{ plus } 34.6\% \text{ times } 5.1\%$ ) = 12.8% in care. An estimated 3.3% of parents using paid care received government subsidies (other than tax credits) ( $12.8\% \text{ times } 3.3\%$ ) = 0.4%. [These figures are based on household survey data and may underestimate subsidies] (Hofferth, 1990).
- 33/ Sweden after-school child care number for children age 7-12 (Expert).
- 34/ Hours of school day include lunch break if coverage is generally available.
- 35/ Denmark length of school day varies from day to day and by locale, and increases as children get older--range = 3 to 5.5 hours. Average day length =  $(3 \text{ plus } 5.5) \text{ divided by } 2 = 4.25$ ;



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### Notes to Tables 2, 3, and 4

4.25 hours times 5 days = 21.25 hours per week (Moss, 1990).

- 36/ France has no school on Wednesday and classes are held on Saturday morning (OECD, 1990b).
- 37/ School day in Italy averages part day in 80% of classrooms and full day in 20% of classrooms (Moss, 1990; Expert).
- 38/ Sweden school day is 20 hours during the first year of compulsory school and 30 hours thereafter (Expert).
- 39/ Australia school year ranges from 194 to 201 days; 197.5 is the average of these two values (OECD, 1990b).
- 40/ Germany school year ranges from 200 to 226 days; 213 is the average of these two values (OECD, 1990b).
- 41/ Netherlands school year ranges from 200 to 240 days; 220 is the average of these two values (OECD, 1990b).
- 42/ Schools in France are not open on Wednesday, however there is some public child care available when the schools are closed (Expert).
- 43/ Most primary schools in Germany are only open from 8:30-13:00 (OECD, 1990b; Moss, 1990).
- 44/ In Italy many schools have no cafeteria and no lunch supervision. On two weekdays and on Saturday, many Italian schools are in session for only half a day (Expert).
- 45/ Pre-primary and primary schools in Luxembourg typically include a two-hour unsupervised lunch period. On two weekdays and on Saturday, schools are only open from 8:00-11:30 or 12:00 (Moss, 1990; Expert).
- 46/ School day in the Netherlands includes a lunch break although only an estimated two-thirds of schools provide lunch and only 30% of children participate (Moss, 1990).

## Appendix 5

### List of Published Sources

	Published Sources
<b>Australia</b>	Baker, 1996; Cochran, 1993; ILO, 1994; OECD, 1990a.
<b>Belgium</b>	EC, 1986; Hantrais, 1994; Kahn and Kamerman, 1994; Moss, 1990; OECD, 1989, 1990a, 1990b; Olmsted and Weikart, 1989.
<b>Canada</b>	Cochran, 1993; Kamerman, 1991b; OECD, 1989, 1990a, 1990b; UN, 1991; Woodill, et al., 1992.
<b>Denmark</b>	EC, 1986; Kahn and Kamerman, 1994; Kamerman, 1991b; Moss, 1990; OECD, 1989, 1990a, 1990b.
<b>Finland</b>	Cochran, 1993; Kahn and Kamerman, 1994; Kamerman, 1991b; Kamerman and Kahn, 1991a; OECD, 1989, 1990a, 1990b; UN, 1991; Woodill, et al., 1992.
<b>France</b>	Cochran, 1993; EC, 1986; Hantrais, 1994; Kahn and Kamerman, 1994; Kamerman, 1991b; Moss, 1990; OECD, 1989, 1990a, 1990b.
<b>Germany</b>	Cochran, 1993; EC, 1986; Kamerman, 1991b; Moss, 1990; OECD, 1989, 1990a, 1990b.
<b>Ireland</b>	EC, 1986; Moss, 1990; OECD, 1989, 1990a, 1990b.
<b>Italy</b>	Cochran, 1993; EC, 1986; Kahn and Kamerman, 1994; Moss, 1990; OECD, 1989, 1990a, 1990b; UN, 1991.
<b>Luxembourg</b>	EC, 1986; Hantrais, 1994; Moss, 1990; OECD, 1990a, 1990b.
<b>Netherlands</b>	EC, 1986; Hantrais, 1994; Kamerman, 1991b; Moss, 1990; OECD, 1990a, 1990b.
<b>Norway</b>	Cochran, 1993; Kahn and Kamerman, 1994; Kamerman, 1991b; Leira, 1993; OECD, 1989, 1990a, 1990b; UN, 1991.
<b>Sweden</b>	Cochran, 1993; Hantrais, 1994; Kahn and Kamerman, 1994; Kamerman, 1991b; Kamerman and Kahn, 1991a; OECD, 1990a, 1990b.
<b>United Kingdom</b>	EC, 1986; Kahn and Kamerman, 1994; Kamerman, 1991b; Moss, 1990; OECD, 1989, 1990a, 1990b.
<b>United States</b>	Blank, Wilkins and Crawley, 1987; Cochran, 1993; Committee on Ways and Means, 1993; Hofferth, 1991; Kamerman, 1991a, 1991b; Kamerman and Kahn, 1991a; OECD 1989, 1990a, 1990b; Robins, 1988.

## **Appendix 6**

### **List of Expert Sources**

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Monique Borsenberger	Luxembourg
Katja Forssen	Finland
Johan Fritzell	Sweden
Peter Moss	United Kingdom and EC Countries
Michel Neyens	Luxembourg
Lisa M. Powell	Canada
Chiara Saraceno	Ireland
Katarina Spiess	Germany
Cristophe Starzec	France
Berenice Storms	Belgium