

# A Re-examination of Welfare States and Inequality in Rich Nations: How In-kind Transfers and Indirect Taxes Change the Story

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## **Abstract**

*Previous studies find large cross-national differences in inequality amongst rich Western nations, due in large part to differences in the generosity of welfare state transfers. The United States is the least generous nation and the one having the most after-tax and transfer inequality. But these analyses are limited to the effects of cash and near-cash transfers and direct taxes on incomes, while on average, half of welfare state transfers in rich nations are in-kind benefits—health insurance, education, and other services. Counting in-kind benefits at government cost and accounting for the indirect taxes used to finance transfers substantially reduces cross-national differences in inequality at the bottom of the income distribution. The findings have implications for how we think about tradeoffs across welfare state domains that all nations face and we illustrate this with reference to the current U.S. debate about health insurance. © 2006 by the Association for Public Policy Analysis and Management*

## **INTRODUCTION**

Previous cross-national analyses of welfare state transfers and their effects on inequality find large differences amongst rich Western nations. They also find that most of the differences in inequality at the bottom of the income distribution—as measured by relative poverty rates—are due to cross-national differences in welfare state transfers (Atkinson, Rainwater, & Smeeding, 1995; Hacker, Mettler, & Pinderhughes, 2005; Kenworthy, 2004; Smeeding, 2005). The Scandinavian countries are big spenders and reduce inequality the most; the English-speaking countries spend the least and reduce inequality the least; and the continental European countries spend a lot, but achieve less equality than the Scandinavians. Amongst the English-speaking countries, the U.S. stands out for being the least generous and having the highest income inequality. These cross-national differences support the proposition of some welfare state theorists such as Titmus (1958) and Esping-Andersen (1990) that there are distinct welfare state regimes, or as Esping-Andersen says, “three worlds of welfare capitalism.”

A major limitation of this research is that analyses of transfers and their effects on inequality are restricted to cash or near-cash transfers. Similarly, cross-national analyses of inequality are based on cash incomes. (Alderson & Nielsen, 2002; Gustafsson & Johansson, 1999; Kenworthy, 2004; Moller, Bradley, Huber, Nielsen, &

Stephens, 2003).<sup>1</sup> Yet in all of these rich countries, close to or more than half of welfare state transfers consist of in-kind benefits such as health insurance, education, child care, elder care, and other services. In-kind as well as cash transfers reduce inequalities in standards of living, as documented in research within selected countries (Lampman, 1984, for the United States; McLennan, 1996, for Australia; and Harris, 1999, and Sefton, 2002, for the United Kingdom).

A second major limitation of previous cross-national studies is that they take account of only direct (income and payroll) taxes and fail to incorporate differences across nations in indirect (sales, value-added, and property) taxes. Most other countries rely heavily on value-added taxes that are very large compared to the sales taxes in the U.S. (Adema & Ladaique, 2005). The value-added tax is close to 20 percent in most Scandinavian and continental countries, whereas state sales taxes are about 6 to 7 percent. A cash transfer of \$1,000 in the United States therefore buys \$930 to \$940 worth of goods, compared to about \$800 worth of goods in Europe. Within the English-speaking countries, the U.S. relies least on indirect taxes and is also least in taxing cash transfers under its income tax. To the extent that the mixture of cash and in-kind benefits and tax structures differ across rich nations, ignoring in-kind benefits and indirect taxes gives an incomplete and perhaps misleading picture of the generosity of welfare states and the effects of welfare state programs on cross-national differences in inequality. It may also contribute to a misunderstanding of the distinctness and nature of welfare state regimes.

The theoretical and empirical importance of valuing in-kind benefits has been understood for nearly a quarter century (Smeeding, 1982). Conceptually, it is clear that these benefits are worth some non-trivial amount to beneficiaries. Similarly, indirect taxes reduce the living standards of households no less than direct taxes. Thus, from a theoretical point of view, a measure that counts in-kind transfers and indirect taxes is superior to the conventional measure of cash disposable income as a measure of a household's standard of living (Atkinson & Bourguignon, 2000). The only cross-national study of inequality to incorporate health and education (Smeeding et al., 1993) found only small changes in cross-national differences, with the exception of Great Britain. However, these researchers used data from 1980, when health care played a much smaller role than it now does; did not incorporate indirect taxes; and relied upon national experts to conduct separate country analyses, rather than utilizing a common cross-national simulation analysis.

The purpose of this paper is to extend previous analyses of the distributional effects of welfare state programs in rich countries by taking into account both in-kind benefits and all the taxes required to finance these benefits. In doing so, we examine whether the current image of large differences in the equalizing effects of welfare state programs in rich countries is essentially correct or whether taking account of in-kind benefits and indirect taxes substantially shrinks cross-national differences in inequality, and alters country rankings. The nations we investigate represent each of the three worlds of welfare capitalism identified by Esping-Anderson

<sup>1</sup> Explanations for these differences in what Esping-Anderson termed "the three worlds of western capitalism" abound. (Kamerman & Kahn, 1978; Esping-Anderson, 1990; Hollingsworth, Rogers, Schmitter, & Streeck, 1994; Gornick & Meyers, 2003; Huber & Stephens, 1999; Alesina, Glaeser, & Sacerdote, 2001; Lindert, 2004). All agree that the differences are attributable primarily to history, culture, and political choices rather than to income or demography, and most contrast the strength of the Scandinavian labor movements and their social democratic parties that are committed to reducing class and gender inequalities to the strength of the 19th-century liberal belief in limited government in the English-speaking countries. Lindert stresses voting rights and mass voting. Many also trace the uniquely low spending of the U.S. to race (Leiberman, 1998; Alesina, Glaser, & Sacerdote, 2001; and Lindert, 2004).

sen: the liberal English-speaking nations (Australia, Canada, the United States, and the United Kingdom), the corporatist continental European nations (Belgium, France, Germany, and the Netherlands), and the social democratic Scandinavian nations (Finland and Sweden).

Unlike most analyses published in this journal, which examine particular programs, our analysis is macro in nature. The analysis pulls together the three largest domains of the welfare state—health, education, and cash transfers—into one compact analytic framework. Further, as we illustrate in the concluding section, the framework is useful for raising policy relevant questions about trade-offs in policies across spending domains.

The paper is organized traditionally, in that we begin by describing our data and methods, followed by analysis results. We find that counting in-kind transfers at government cost and taking account of indirect taxes on the value of cash benefits substantially shrinks cross-national differences and alters country rankings in respectively the aggregate value to recipients of welfare state spending and inequality at the bottom of the income distribution. A sensitivity analysis indicates that the inequality results, particularly for the aged, are sensitive to the assumption that recipients value in-kind benefits at government cost. Though the United States spends enough on health care transfers to reduce the economic distance between low-income families and average-income families nearly as much as do other rich nations, the value of health insurance to low-income families may be lower than cash transfers. At the end of the paper, we discuss implications for future research and for policy.

## DATA AND METHODS

We use several data sources to construct our measures of welfare state program transfers. The aggregate public expenditure data is derived from the *Social Expenditure Database (SOCX) 1980-2001* (OECD 2004b), with the exception of education data, which is derived from *OECD Education at a Glance* (2002a) and early childhood education (ECE), which is taken from Gornick and Meyers (2003). The *Social Expenditure Database* includes the following categories of benefits: old-age cash benefits; disability cash benefits; occupational injury and disease; sickness benefits; services for the elderly and disabled; survivors; family cash benefits; family services; active labor market policies; unemployment compensation; housing benefits; public health expenditure; and other contingencies (for example, cash benefits to those with low income). Such benefits may be cash transfers or direct in-kind provision of goods and services. While data on public benefits encompasses expenditures paid and controlled by all levels of government (federal, state, and local), the quality of the data varies across countries, particularly with respect to expenditures by lower tiers of government (OECD, 2002c). The OECD housing data includes only cash expenditures tied to housing; in-kind and tax expenditures for housing are omitted. Finally, aggregate employer-provided health benefits in the United States are derived from Adema's OECD report (2005).

The micro data that we use for the distributional analysis are from the Luxembourg Income Study (LIS) database, which now contains over 140 household income data files for 30 nations covering the period 1967 to 2002 ([www.lisproject.org](http://www.lisproject.org)). For this paper, we limit the analysis to 10 nations and their most recent datasets. Within each country, we develop two measures of the economic resources of households. The first measure is "disposable income," which is the standard measure utilized in cross-national research on inequality and its determinants. Dis-

posable income is equal to income earned in the market (earnings, interest, dividends, and rents), minus direct (income and payroll) taxes, plus cash and near-cash transfers, such as food stamps and housing allowances. (All of these items are reported by respondents in the LIS database.) The second measure, which we call “full income,” differs from disposable income because it adds the value of health and education benefits and subtracts the direct and indirect taxes required to finance cash, near-cash, health, and education benefits. (All of the additional items are imputed.) The measures also differ in that income taxes which finance other, non-transfer government services are not subtracted from full income.

Because it is a new measure and represents the heart of our empirical contribution, we describe in more detail the construction of the full income measure. We begin with the LIS measure of disposable income and add third-party health care subsidies (public spending in all nations, plus employer subsidies in the U.S.), education subsidies (public sector support for early childhood education), and elementary and secondary schooling, but not tertiary schooling or public day care for children under age three. From disposable income, we subtract indirect taxes, including value-added taxes (VAT) (sales, excise), corporate taxes, and real property taxes. We exclude all taxes paid for government final goods and services, and only subtract taxes to the extent that they equal overall social welfare benefits paid in each country. If we included the value of other taxes, we should also include the value of the benefits they finance. But, we are describing the redistributive effect of only social welfare transfers. Defense, law and order, roads, bridges, and other government activities all have distributional effects. But, these are beyond the scope of this paper. Though ignored in practice in all of the studies cited above, public finance economists agree that such a balanced budget analysis is the theoretically appropriate procedure for estimating the distributional impacts of public programs (Fullerton & Rogers, 1993; Musgrave, 1959).

We ignore tertiary education benefits and all other non-cash benefits for the elderly and for youth, including child care subsidies for children under age three.<sup>2</sup> Omitting these benefits is a limitation, but the LIS provides insufficient data to allow us to impute their value to households. Elementary and secondary education and health care cover the vast majority of children’s non-cash benefits in every nation studied. Similarly, hospital and physician and pharmaceutical services provided to the elderly make up the bulk of their health care subsidies. Though figuring out how to distribute benefits for higher education is particularly problematic, a high priority for future research is to include all in-kind benefits.

With the exception of health in the United States, we assume an equal distribution of health and education expenditures across the income distribution within all nations. This is a strong assumption, which, based upon scattered evidence for particular countries (Card & Payne, 1998; LeGrand, 1978; Wilson, 2000) is almost certainly false. Below, we examine the sensitivity of our findings to this assumption.

### Health Care Benefits

We begin with the average public health care expenditure per person by country, taken from OECD (2002b). (The data on health and education described below are available

<sup>2</sup> OECD data on early childhood education are by their own admission incomplete and inaccurate. Sources provided by Gornick and Meyers (2003) were more complete and consistent, except for subsidized child care for children under age three, where data is even less complete. Consequently, we omitted child care for children under age three.

in Appendix table A-1 at [www.siscenter.org/garfinkel](http://www.siscenter.org/garfinkel).) We used OECD (2003) purchasing power parities (PPP) to put all countries' non-cash benefits into 2000 United States PPP adjusted dollars, nationally price indexed to the correct nation year (1997 to 2000 for all but France and Australia, both 1994). The U.S. amount is not just public subsidy, but includes two additional amounts: employer subsidies, taken from the Employment Benefit Research Institute (2004), and an amount for the uninsured (about 15 percent of the population) who are receiving charity or other public care with a value of half of the amount provided by the public sector, taken from Wolfe (2002). For 2000, these per capita amounts are: \$2,005 (public subsidy); \$2,535 (employer subsidy); \$1,002 (uninsured subsidy). From the Current Population Survey (CPS) data which underlie LIS, we can separate the U.S. population into those with public subsidy (Medicare, Medicaid, other); those with employer provided insurance; and the uninsured, and assign each person an average subsidy.

Two points should be stressed about the simulation of health insurance benefits in the U.S. First, the simulation reflects the unequal distribution of health insurance in the U.S. Second, the inclusion of employer-provided benefits increases rather than reduces inequality at the bottom of the income distribution because the very poor—those at the 10th percentile—receive virtually no employer-provided health insurance, whereas those at the median receive quite a bit. Omitting the value of employer provided insurance reduces the well-being of the family at the median and thereby reduces measured inequality.

We impute the “insurance value” of coverage to each person based on their age. That is, we take each national average per capita amount, assign that to 19- to 34-year-olds, and from there adjust the insurance subsidy according to a person's age. The insurance value is the amount that an insured person would have to pay in each age category so that the third-party provider (government, employer, other insurer) would just have enough revenue to cover all claims for such persons (Smeeding, 1982). We also implicitly include the insurance value of publicly provided nursing home services for the non-institutionalized population. Each person of a given age receives this benefit regardless of actual health care usage. The multipliers we used for all countries—taken from Freund and Smeeding (2006)—are .75 for persons under age 18; 1.0 for persons age 19 to 34; 1.25 for 35 to 54; 1.75 for 55 to 64; 3.0 for 65 to 74; and 4.0 for those 75 and over. Though the insurance approach has been used by economists for over 30 years to estimate the benefits of subsidized health care, it has also been questioned by Le Grande (1978) and Atkinson (1983), and therefore alternatives to such valuation should be incorporated in future research.

### **Education Benefits**

We used OECD (2002a) data to obtain average primary and secondary public expenditure per pupil in each country year. These were assigned to students according to starting and ending ages of primary and secondary school in each nation up to age 18. No account was taken of dropouts or attendees of nonpublic schools. Each person received the same national average benefit according to OECD estimates.

OECD (2002a) outlays for early childhood education (ECE) in some countries are at odds with other available data sources because countries classify child care expenditures differently—some put them in education, in social welfare, or in both budgets. Marcia Meyers (2003) was kind enough to share the data used in her recent book with Janet Gornick (Gornick & Meyers, 2003) and to help us update these data. We also used several sources including the Clearinghouse on Interna-



tional Developments in Child, Youth, and Family Policy at Columbia University (<http://www.childpolicyintl.org>) and the European Union “Eurydice” Web site (<http://www.eurydice.org>) to determine the distribution of these benefits. These sources gave us five parameters: (1) number of children using ECE benefits in each nation; (2) number receiving full-day vs. half-day benefits; (3) average amount spent per child per day; (4) average number of days attended; and (5) total spending in each country. The resulting mean benefits per child enrolled in ECE by country are given in the fourth column in Table A-1. (Full details are available from authors.) We limited benefits to children aged three or over in the survey year; randomly assigned children each benefit amount; and integrated benefits in each nation with the year they began elementary schooling.

### Taxes

For each country, we first calculate an aggregate amount of taxes needed to finance cash, near-cash, health, education, and ECE benefits. All payroll taxes are assumed to be devoted to benefits and the rest of the taxes to be divided according to the country’s mix of taxes (not including payroll taxes). We use OECD data on the relative distribution of taxes by source for each nation, covering five taxes: personal income, payroll, corporate income, property, and “goods and services” (value-added, sales, or excise) taxes (as described in Table A-2).

To distribute the taxes by income class, we use actual LIS reports of income and payroll taxes (though the amount of employer payroll tax had to be imputed based on LIS earnings reports and the country’s payroll tax structure, and then counted in the tax balancing equations). Following standard practice, we assume that employer payroll taxes and employer provided health insurance in the U.S. are taken from wages that employers would otherwise pay (Lampman, 1984; McLennan, 1996; Harris, 1999; Sefton, 2002). Thus, the “incidence” is on labor and to calculate income gross of benefits, we add these to market income (Britain, 1971).

With respect to other taxes, we assume the incidence of the corporate tax and of the goods and services tax is on the consumer, and thus distribute according to overall consumption; the incidence of the property tax is similarly assumed to fall on housing consumption. We assign corporate, goods and services, and property taxes according to LIS-calculated ratios of overall expenditure (including housing expenditure) to income ratios by LIS disposable income decile, provided by Eva Sierminska and Thesia Garner from their LIS-based consumption work (Sierminska & Garner, 2002). Decile specific consumption to income ratios are taken from micro data surveys for four nations (Canada, France, the United Kingdom, and the United States), and an average of the four is applied to other nations. In these four countries, consumption exceeds income in the bottom quintile, which means that consumption and value-added taxes are regressive, not just at the top, but also at the bottom of the income distribution.

### Equivalence Scales

For cross-national comparisons of inequality, the household is the only comparable income-sharing unit available for most nations. While the household is the unit used for aggregating income, the person is the unit of analysis. Household income is assumed to be equally shared among all individuals within a household. A variety of equivalence scales have been used in cross-national comparisons in

order to compare well-being between households with differing compositions. We adjust household incomes (both disposable and full incomes) to reflect differences in household size by dividing income by the square root of household size.

This equivalence scale allows for economies of scale, but does not unduly bias measures toward larger units (with children) or smaller units (with elders) (Atkinson, Rainwater, & Smeeding, 1995). For example, in contrast to using per capita income, which divides by household size, using the square root of household size equivalence scale, a household of four needs twice as much income, rather than four times as much income as a household of one, to be equally well off.

Arguments can be made for utilizing a different equivalence scale for cash and in-kind benefits. On the one hand, in-kind benefits do not exhibit economies of scale, which implies they should be divided by household size rather than the square of household size. On the other hand, in-kind benefits are not shared equally by all family members, which suggests that they should be added to equivalized cash income on an individual basis. Education, for example, is targeted to children and from the child's point of view, their full income equals the equivalized cash value plus the full value of the cost of their schooling. Thus, our use of the same equivalence scale for both cash and in-kind expenditures is a reasonable middle-of-the-road solution, but future research should address the sensitivity of our results to this assumption.

### Measures of Inequality

Our measure of inequality is the economic distance between households at three points in the income distribution in each country—the 10th, 50th, and 90th deciles. Though proportions of the population below a relative poverty line and Gini coefficients are more commonly used, the economic distance measure has been used in previous studies of income distribution (most recently in Smeeding, 2005) because it allows for comparisons at both the bottom and the top of the income distribution and is more readily interpretable. Utilizing relative poverty rates to focus on the bottom of the income distribution also has the disadvantage that if one includes more resources in the measure of income in a poverty measure, one should also raise the poverty needs level. As we report below, when we use full income rather than disposable income, we find no families with children or elders in any country that lie below 50 percent of the median adjusted full income. While this is the most common measure of relative poverty in cross-national research in rich nations (Rainwater & Smeeding, 2003), future research should examine the effects on relative poverty rates with varying definitions of the poverty line that take account of needs for health and education. Also, it is possible to compute Gini's for the bottom and top halves of the income distribution. Future research should also examine whether our findings would hold if the Gini coefficient, rather than economic distance, were the dependent variable.

Finally, though examining how families at the 10th percentile are faring is justified by a Rawlsian (Rawls, 1972) focus on maximizing minimum incomes, other points in the lower half of the income distribution may also be of interest. In particular, previous research indicates that it is the near poor and lower middle class (the 20th to 35th percentiles) that fare the worst under welfare states, such as the United States, that rely heavily upon income testing (Garfinkel, 1996; Tullock, 1982). Examining the ratios further up the income distribution is a high priority of our future research agenda.

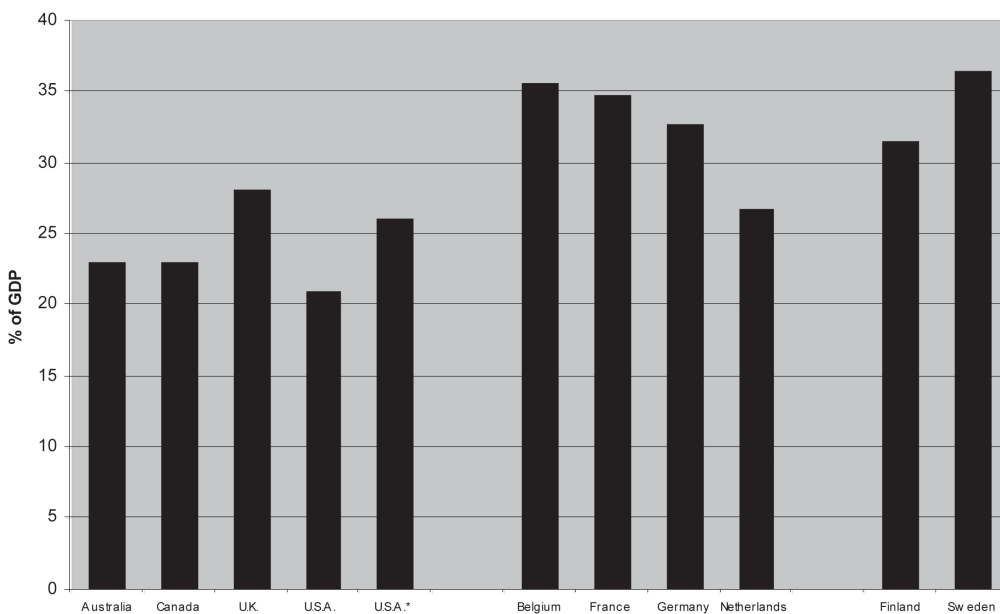
### CROSS-NATIONAL DIFFERENCES IN THE AGGREGATE VALUE OF SOCIAL WELFARE TRANSFERS

Figure 1 displays aggregate social welfare benefits as a proportion of the Gross Domestic Product (GDP) for each of the ten nations. Because there is controversy about whether to include employer provided health insurance as a social welfare benefit, for the United States, social welfare expenditures are measured with and without employer provided health insurance. Two facts about gross expenditures stand out.

First, all countries spend a substantial fraction—between 21 and 37 percent—of their GDPs on social welfare. Publicly provided social welfare benefits constitute well over half of total government expenditures in all of these countries (Osberg, Smeeding, & Schwabish, 2004). Most of what governments do—tax one group of people and provide benefits to another—is therefore represented in Figure 1.

Second, the English-speaking nations spend the least, the continental European nations spend substantially more, and Sweden spends the most. If employer provided health insurance is not counted, the United States spends the least, at only 21 percent of GDP. This pattern is consistent with findings of other comparative studies (Esping-Andersen, 1990; Kamerman & Kahn, 1978; Smeeding, O'Higgins, & Rainwater, 1990; Smeeding, 2005). If employer-provided health insurance is included, however, the United States spends nearly as much as the United Kingdom, and more than Canada and Australia.

Most economists treat tax expenditures as economically equivalent to explicit budget expenditures and would therefore agree that, at a minimum, the tax subsidized portion of employer provided health insurance (between one-fifth and one-quarter of the total) should be included as welfare state expenditures (Adema & Ladaïque, 2005). While a case can be made for only counting the tax subsidized por-



\* Includes employer-provided health insurance.

**Figure 1.** Welfare state expenditures as a percent of GDP in 10 rich nations (2001).



tion on the grounds that state funding is different than funding stimulated and regulated by the state, some economists and political scientists—whose practice and rationale we follow—argue that the entire amount of employer expenditures should be included on the grounds that these benefits are publicly subsidized and regulated; that employer-provided health insurance involves socialization of the risk of ill health and redistribution from the healthy to the sick, at the firm rather than the national level; and finally that failing to include these benefits underestimates the proportion of the population with insurance and mis-characterizes the U.S. welfare state by obscuring and minimizing how much it spends on subsidized health insurance.<sup>3</sup>

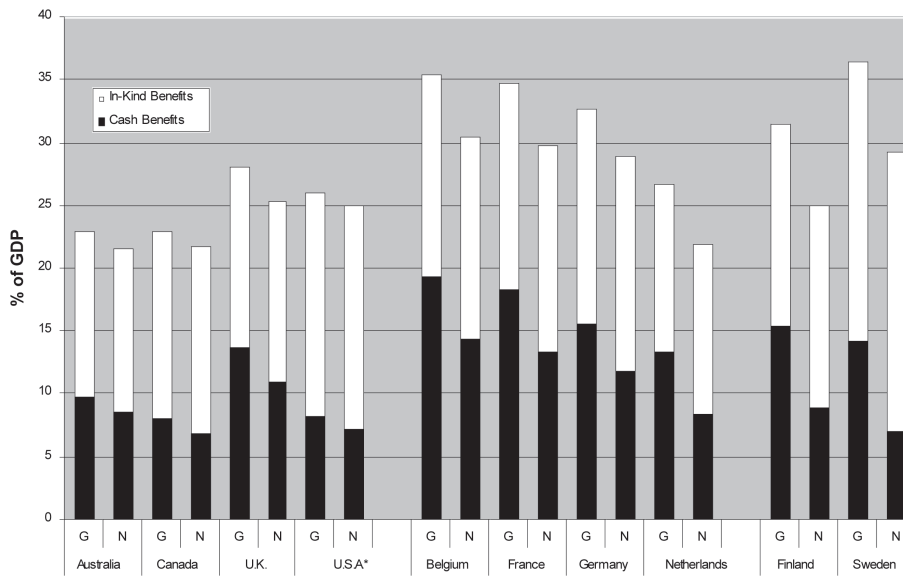
By the same logic, at a minimum, the tax subsidized portion of employer provided pensions should also be included as a welfare state transfer. The case for including the entire pension, however, is weaker than the case for including the entire amount of health insurance. Health insurance, by its nature, redistributes from the healthy to the sick. Employer-provided pensions may involve no interpersonal redistribution (other than the tax subsidy) if, for example, the pension is a defined contribution plan that involves private accounts. For simplicity, we follow previous practice and count all employer provided pensions as part of market income.

Figure 2 displays the two major domains of welfare state expenditures: cash and non-cash (mostly health and education) spending. Each country is represented by two bars. The bottom, black part of each bar represents cash benefits while the top, white part of the bar represents in-kind benefits. In the first bar for each country, cash benefits are measured on a gross basis while in the second they are valued according to their after-tax value. The measurement of non-cash benefits is identical in both bars. Comparing the gross expenditures bars, two points stand out from Figure 2. First, except for Belgium and France, where the percentages are about 40%—non-cash spending amounts to half or more of total welfare state spending. In view of the large size of in-kind transfers, studies that take account of only cash transfers are omitting about half of the total redistribution accomplished by welfare states.

Second, the Anglo Saxon nations, and particularly the United States, spend relatively more on non-cash benefits than do the other nations. Americans are small spenders on cash support but big spenders on education and especially health care. More than 40 percent of American social welfare transfers are devoted to health care, compared to 29 percent and 24 percent in the next highest countries—Canada and Germany. Indeed, these figures understate how much more Americans spend on health as compared to citizens of other countries because private, out-of-pocket health expenditures are trivial in other countries but add another 2 percent of GDP in the United States.

Finally, a comparison of the first and second bars indicates that the value of cash transfers to citizens shrinks substantially in the Scandinavian and continental European countries once indirect taxes and taxes on transfers are taken into account. Indeed, a comparison of the second bars provides no hint of the three worlds of welfare capitalism. France is above Sweden and Germany is just barely below. Australia, Canada, and the Netherlands are tied for the bottom while Finland and the U.S. are tied for the second lowest. This dramatic decline in total differences and shifts in rankings across countries in the aggregate value of social wel-

<sup>3</sup> Lampman (1984) makes this argument. See also Hacker (2002) for a political science perspective on the issue of employer provided health benefits. Only the United States heavily subsidizes private health insurance via employers (see OECD, 2004a).



**Figure 2.** The shares of cash (gross and net) and in-kind transfers in 10 rich nations (2001).

fare transfers suggests that previous estimates of cross-national differences in economic well-being may also be quite misleading.

#### CROSS-NATIONAL DIFFERENCES IN INEQUALITY

Panels A and B in Figures 3, 4, and 5 present data on the distribution of cash, disposable incomes, and full incomes, respectively, for all persons and for households with children and the elderly. Panel C is discussed in the next section. There are two reasons for presenting results for the two sub-groups. First, the bulk (about 80 percent) of total welfare state transfers go to the aged and to households with children, but the effects on the two groups could be quite different. Second, and related, a large part of what the welfare state does is to transfer resources across the life cycle, and confining the analysis to households at the beginning and households at the end of the life cycle is a crude method of abstracting from life cycle effects.<sup>4,5</sup>

<sup>4</sup> The adjustment is crude because both child rearing and retirement encompass broad age ranges. The elderly population in each country ranges in age from 65 to over 100. On average, the older the elderly person is, the lower are their income and taxes paid, and the greater are their health costs. Amongst the elderly, incomes decline with age because the longer one lives, the more likely it is that they will have to eat into savings, and because the younger old earned more during their working years and therefore have higher pensions. Similarly, amongst families with children, the age range of the parents is from below 20 to over 60. The older the parents, the higher the income and the greater the taxes that will be paid. For a very early attempt to distinguish between life cycle and across-class redistributions within the U.S., see Paglin (1975). For a more refined attempt to distinguish between life cycle and across class redistributions within the U.K., see Falkingham and Hills (1995).

<sup>5</sup> Our analysis, like all of the others cited in the text, is a point-in-time analysis. For an analysis that examines intergenerational transfers, but with no variance of taxes or benefits within generations, see Bommier, Lee, Miller, and Zuber (2004).

For each measure of income, households are arrayed from poorest to richest. Within each country households at three points of the income distribution are compared: the middle, the bottom, and the top. The middle income household is the median income—half the households in the country are poorer and half richer. The low-income household is the one with 10 percent poorer and 90 percent richer, and the high-income household is the one with 90 percent poorer and 10 percent richer. The economic distance bars are centered on the median income (denoted by the vertical line at 100% of the median) and measure the ratio of incomes of the poor and rich to the middle-income household. Thus, in Figure 3, panel A, the far left of the economic distance bar for Australia is just to the left of the 50 percent line, indicating that the disposable income of the poorest household is equal to 45 percent of that of the middle-income household. The income of the rich household (the far right of the bar) is equal to 192 percent of the median-income household and 422 percent of the poor household. The numerical values of these three ratios are also presented respectively in the one column to the left and two columns to the right of the distance bars. The economic distance bars depict the big picture and the numerical values give the specific details.

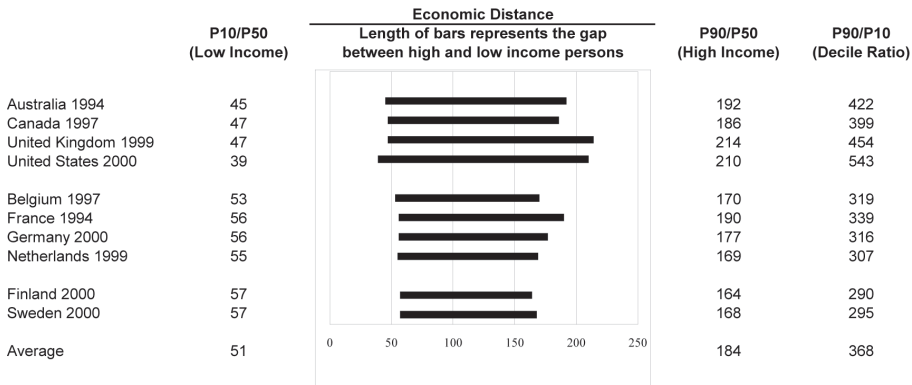
The picture for disposable income in panel A of Figure 3 corresponds exactly to previous research and the three distinct worlds of welfare capitalism. It depicts substantial differences in inequality across nations at both the bottom and the top of the income distribution. The Scandinavian countries are the most equal, the English-speaking countries are the most unequal, and the U.S. is the most unequal of all. Note, in particular, the differences at the low end. The United States has the lowest ratio of low to middle disposable incomes—39. The ratios for the other English-speaking nations range from 45 to 47. The continental European nations have ratios in the low to mid-50s and the two Scandinavian nations have ratios of 57.

The picture for full income in panel B of Figure 3 is dramatically different at the bottom of the income distribution. As compared to panel A, the distance bars at the bottom of the income distribution in panel B are barely distinguishable. Though the English-speaking nations still have the lowest 10/50 ratios, and Sweden the highest, the 10/50 ratios in the first column of panel B are now in a tight band—varying from 52 percent to 58 percent. There is no longer any evidence of 3 distinct worlds of welfare capitalism in terms of inequality or stratification—one of the core elements of Esping-Anderson's categorization of welfare states. The difference between Sweden and France, Germany, and the Netherlands is only 1 point—58 versus 57. Finland is 1 point lower than Great Britain. This reinforces the large group of scholars who have challenged the validity of the concept of three worlds of welfare capitalism.<sup>6</sup>

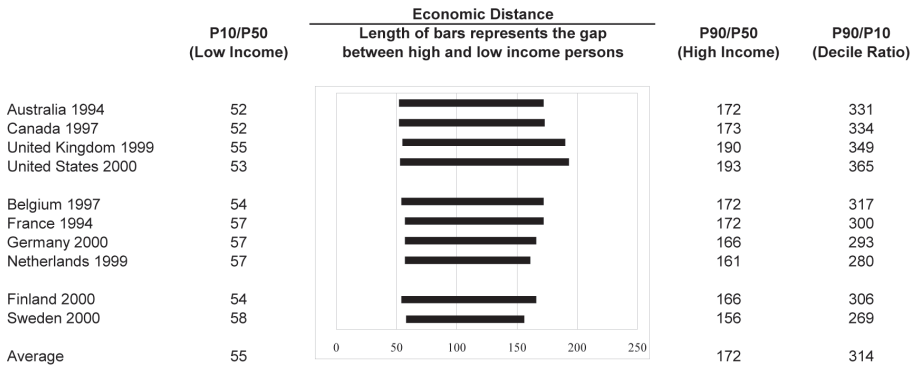
The differences between the two measures at the top of the distribution—as reflected in the 90/50 ratios—are much smaller, with the biggest drops coming in the English-speaking countries. But, the United Kingdom and the United States remain substantially more unequal at the top of the distribution than other countries. More generally, the three worlds of welfare capitalism continue to appear at the top end of the distribution. Finally, the differences between the two measures over the entire distribution—as reflected in the 90/10 ratios—combine the differences at the top and bottom of the distribution. The overall differences across countries are greater for both measures and the degree to which full income shrinks dif-

<sup>6</sup> Feminist scholars of the welfare state have been particularly effective critics of the 3 worlds view. See for example, Orloff (1993). For more general critiques and overviews of the debate, see Pierson (2000) and Arts and Gelissen (2002).

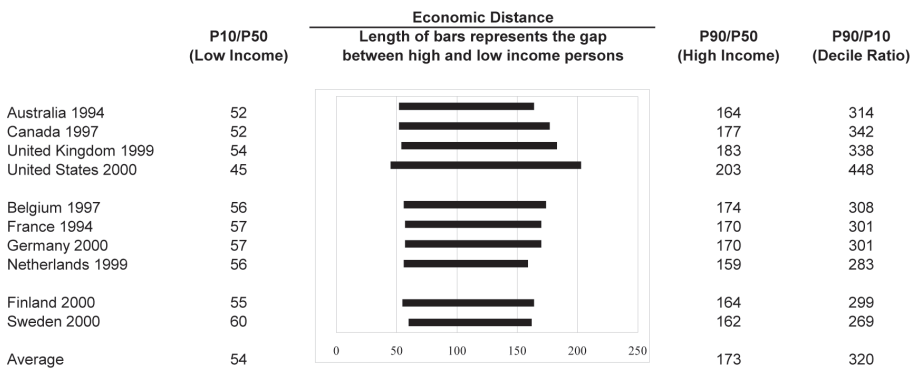
**A. Disposable Personal Income**



**B. Actual Full Income**



**C. Average Benefit Full Income**



Source: Authors' calculations from the Luxembourg Income Study.

**Figure 3.** Three measures of relative economic well-being: ALL PERSONS.

(Numbers given are percent of all persons' median equivalent income in each panel.)

ferences across countries is an average of the large effect at the bottom of the distribution and a small effect at the top of the distribution.

Why do the results change so dramatically at the bottom of the distribution when we include the value of the in-kind education and health benefits and take account of the taxes required to finance these benefits? There are two reasons, both already discussed in conjunction with Figure 2. First, compared to other advanced industrialized nations, the United States and the other English-speaking countries are short on cash and long on in-kind benefits. Second, the big spending welfare states rely more heavily on indirect taxes and taxation of cash benefits than does the United States.

Figure 4 and Figure 5 display country distributions for two sub-groups: households with children and elderly households. The overall results are similar to the results for the entire population. The differences across countries are greater for both children and the elderly than they are for the entire populations, for both measures of income. But the differences between the two measures of income are also somewhat greater for both subgroups.

### ROBUSTNESS OF INEQUALITY RESULTS TO VALUATIONS OF IN-KIND BENEFITS

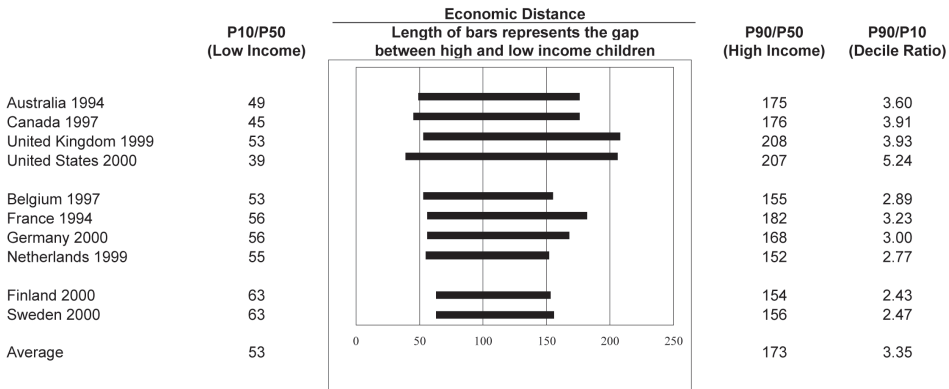
In this section we examine the sensitivity of the inequality results to two assumptions underlying the simulations: 1) government cost is a good measure of the value of in-kind benefits to recipients, and 2) non-cash benefits are distributed equally across the income distribution.

Government cost may not be a good measure of the value to recipients for a number of reasons. Economists generally assume that in-kind benefits are worth less to recipients than the cash equivalent value because in-kind benefits restrict consumption choices while cash transfers permit full choice.<sup>7</sup> In cross-national research, valuing in-kind benefits at government cost is equivalent to assuming that cross-national differences in expenditures accurately reflect cross-national differences in the quantity and/or quality of services. As we have seen, the United States spends substantially more on health (and to a lesser extent, more on education) than all other nations. Anderson, Reinhardt, Hussey, and Petrosyan (2003) find that Americans spend more than twice the OECD average on health care, but get about the average in terms of health care services. They argue that the differences in health care costs are attributable to differences in prices of health care. If they are right, the extraordinarily high U.S. expenditures for health care may not be buying anything of extra value. One simple way to address this issue empirically is to assume that the quantity and quality of health and education services is the same across nations. Thus, we simulated equal benefits of education and health across nations, using the mean benefit across nations, but preserving the differences in financing. This has the effect of discounting the value of United States health and education benefits to the cross-national average benefits levels.

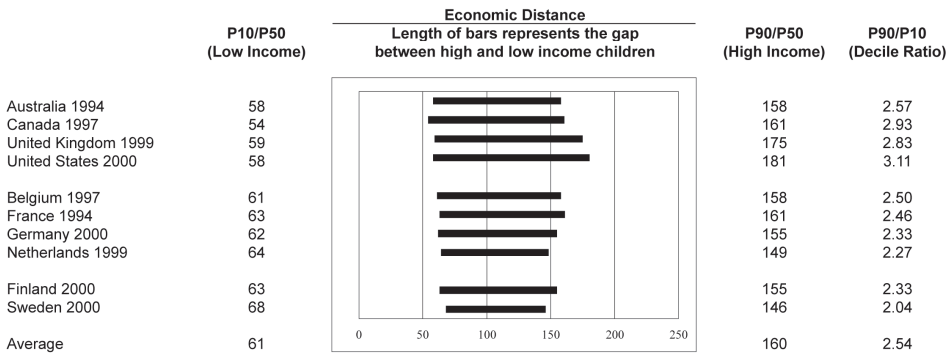
<sup>7</sup> The difference between government costs and the value to recipients is largest where the ratio of in-kind to cash income is the largest—among poor families. On the other hand, as discussed in the methods section, it could be argued that we have underestimated the value of in-kind benefits to children because though education is targeted exclusively at children, we add the value of education to household disposable income and then divide by the square of household size to obtain equivalent income per child. Arguably, it might be more appropriate to add the value of education per child directly to equivalent disposable income. Doing so would give even more weight to the in-kind benefits. Similarly, some benefit cost analyses suggest that the value of health benefits may be greater than their cost (Cutler, 2004). Finally, our valuations take no account of the external benefits of health and education and the latter, at least, are quite large (Wolfe & Haveman, 2003).



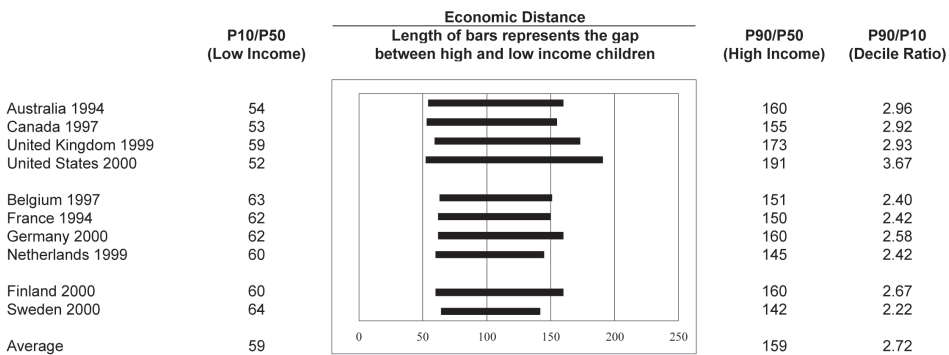
**A. Disposable Personal Income**



**B. Actual Full Income**



**C. Average Benefit Full Income**

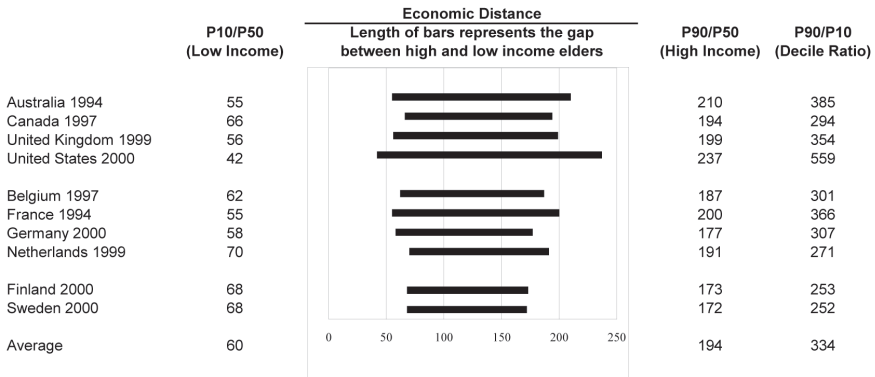


Source: Authors' calculations from the Luxembourg Income Study.

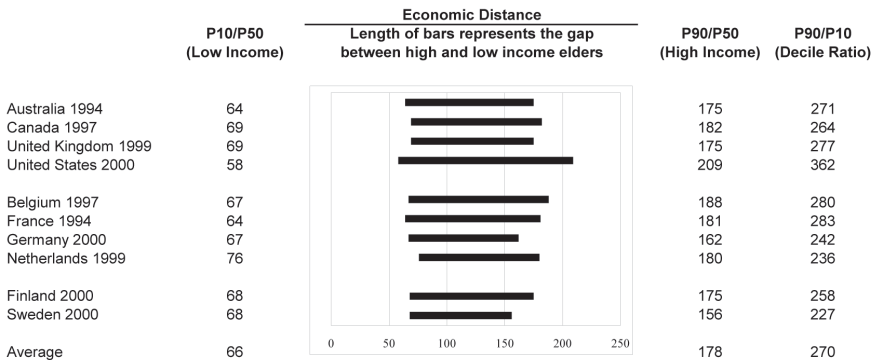
**Figure 4.** Three measures of relative economic well-being: CHILDREN.

(Numbers given are percent of children's median equivalent income in each nation in each panel.)

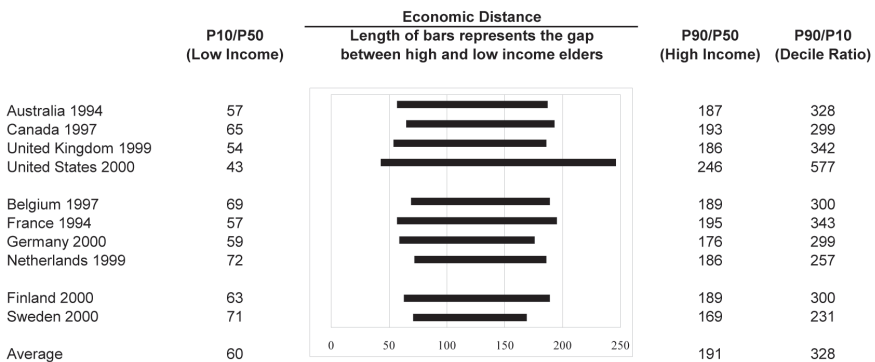
**A. Disposable Personal Income**



**B. Actual Full Income**



**C. Average Benefit Full Income**



Source: Authors' calculations from the Luxembourg Income Study.

**Figure 5.** Three measures of relative economic well-being: ELDERS.

(Numbers given are percent of elders' median equivalent income in each nation in each panel.)

The results for equal benefit value across all nations' scenario are presented in panel C in Figures 3 through 5. Because education affects only families with children, while health care disproportionately affects the aged, we focus on results for only families with children and the elderly. For families with children (Figure 4), the equal benefit results (panel C) are closer to the full benefits simulation (panel B), indicating that even if the value of education and health services received by children in the U.S. is reduced to only the average value of services received in other countries, counting them makes a large difference in relative resources across all nations and especially for United States children. Under all scenarios examined for families with children, taking account of health and education expenditures substantially reduces differences among nations in general and improves the position of United States in particular.

For elders (Figure 5), however, the equal benefit results are much closer to the disposable income results (compare panels A and C). Indeed, the 10/50 ratios for disposable income and equal value benefits simulations in the United States for the elderly are virtually identical. Note that these results do not vitiate the conclusion that the U.S. transfers sufficient resources to reduce gaps in economic distance in the bottom half of the distribution nearly as much as other rich nations. It's just that our extraordinarily high health care expenditures are worth much less than government cost. If we spend much more, but get only average benefits, the implication is clear. The aged would be better off if we spent the same total amount, but shifted the excess spending on health care to spending on cash. Thus, our results highlight the importance of answering the question: Is the U.S. getting its money's worth from the vastly disproportionate amount of resources we are devoting to health care? We return to this question in the last section.

With respect to the second assumption—that benefits are distributed equally across income classes—though we take some account of differences in spending for health in the U.S., we take no account of inequality in expenditures for children's education. Card and Payne (1998), Wilson (2000), Duncombe and Yinger (1997), and Wilson, Lambright, and Smeeding (2006) find that public school spending in the United States differs by up to 50 percent between rich and poor districts. In results not shown, we find that if poor children received education benefits of only half those received by rich children, the results for the United States children would be much closer to the results shown for cash alone (panel A vs. panel B in Figure 4). The sensitivity of our U.S. results points to the need to undertake research on differences in expenditures on health and education within countries by income class, because expenditures on schooling are likely to differ by income class in other countries besides the United States, and we have no evidence of by how much.

## SUMMARY, CONCLUSIONS, AND POLICY IMPLICATIONS

Previous research finds large differences in inequality across rich Western nations, with the United States being, by far, the most unequal. But this research ignores both in-kind transfers and indirect taxes. Theoretically, full income, which counts in-kind transfers and indirect taxes, is a superior measure of a household's total economic resources than the conventional measure of cash disposable income.

We find that valuing in-kind benefits at government cost and taking account of indirect taxes substantially narrows cross-national differences in the net value of social welfare transfers and reduces inequality within and across countries. At the bottom of the income distribution, when full income is used instead of disposable income, the difference between the most unequal and most equal countries (the

United States and Sweden) shrinks dramatically. The full income results do not support the hypothesis of three worlds of welfare capitalism. At the top end of the distribution, inequality roughly fits into the “three worlds” hypothesis.

Our sensitivity analysis of the assumption that cross-national differences in government costs for health and education benefits accurately reflect differences in value to recipients, indicates that even if the extraordinarily high expenditures on health care in the United States are not buying more or better services, our core results are relatively robust for analyses of the distribution of economic well-being among children. But for elders, there is little difference in inequality amongst the elderly populations between the disposable and “average” full income measures, suggesting that low income elderly in the United States would be better served by a shift in spending from health care to pensions. This sensitivity analysis points to the critical need for future research on the valuation of in-kind benefits.

There are many limitations to our analysis. First, we do not simulate the value of all in-kind benefits. Second, aside from health in the United States, we assume equal distribution of health and education expenditures across the income distribution in all countries. Third, there are good reasons for believing that the value of in-kind benefits to recipients might be either higher or lower than government cost. Future research should value and simulate the other in-kind benefits, examine the distribution of in-kind benefits within countries, and explore alternative valuations of in-kind benefits. Finally, we examine only 10 countries and only one year for each country, we focus on only one measure of inequality, and we utilize a crude estimate of consumption to income and assume that the incidence of sales and value-added taxes, corporation profits taxes, and property taxes are proportional to consumption. Future research needs to address these issues as well.

### **Policy Implications**

Notwithstanding these caveats, we expect that future research will confirm our findings that counting in-kind benefits and indirect taxes substantially shrinks cross-national differences in both the net value of social welfare transfers and in inequality of resources at the bottom of the income distribution. What distinguishes the United States from other rich nations is not so much our overall level of spending or the degree of inequality of total resources at the bottom of the income distribution, but rather the kinds of resources being transferred. Comparatively speaking, United States spending is very low on cash benefits and early childhood education, relatively high on education, and very high on health care. The United States spends enough on health care transfers to reduce the economic distance between low-income families and average-income families nearly as much as do other rich nations. Would the country as a whole be better off with a different mixture of cash and in-kind benefits? Our sensitivity results indicate clearly that the answer depends upon the value of in-kind benefits, especially health care. If health care is valued by beneficiaries at government cost, the United States is doing much better than previously thought in reducing inequality in resources at the bottom of the income distribution. If the value is no more than the average cost of health care across all rich nations, by spending too much on health care and too little on cash, the U.S. is forgoing the opportunity to reduce poverty rates amongst the elderly to very close to the lowest levels in the world. In the last few paragraphs, we suggest that the case for a shift in spending is plausible, but also offer two related reasons for being cautious.

The case for a shift begins with the recognition that the United States welfare state is unique among rich nations, not in how little it costs the country, but rather in how much of the total is spent on health care. The argument is strengthened by evidence that the United States' excess spending on health care is buying little if any excess benefits. We have already cited the Anderson, Reinhardt, Hussey, and Petrosyan (2003) findings that we pay higher prices for the same amount of care. In addition, there is a large academic and political literature which notes that the U.S. system of private health insurance entails large administrative costs compared to the administrative costs of all other rich countries which have national health insurance (Reinhardt, Hussey, & Anderson, 2004). From the opposite side of the political spectrum, free market economists also believe we are spending too much on health care, but attribute the problem to excessive health insurance coverage for ordinary health care expenditures. This view underlies President Bush's recent proposal to limit the tax subsidy in the income tax for employer provided health insurance benefits by counting the benefits as taxable income, and of his proposal for Health Savings Accounts (HSAs) and high deductible health insurance (Feldman, Parente, Abraham, Christianson, & Taylor, 2005; Owcharenko, 2004). Indeed, restraining the growth of health care costs has such widespread academic and political support that David Cutler devotes a good deal of his book *Your Money or Your Life* (2004) to challenging this conventional wisdom of excessive spending. The book provides convincing evidence that the benefits of just a few new medical care procedures exceed all of the recent increase in costs of medical care in the United States. Still, the fact that benefits exceed costs does not address the issue of whether costs could be much lower, with little or no diminution in benefits.

The case for shifting priorities is further strengthened by evidence that the money can be well spent elsewhere. Steurle and Bakija (1994) make such a case for a shift from health insurance to more cash for the aged on the basis of the demonstrated effectiveness of cash transfers in raising the living standards of the truly aged who are beyond their working years. There is also ample evidence that the returns to early childhood education are quite high (Currie, 2001; Heckman & Lochner, 2000; Karoly et al., 1996; Waldfogel, 2006). Finally, the case for a shift is strengthened by evidence that the large U.S. spending on health care is indeed displacing other social welfare spending. Most recently, research by Kane and Orszag (2003) indicates that increased spending on Medicaid has displaced spending on higher education and other benefits, such as early childhood education, at both the federal and state level.

Two related arguments suggest caution. First, Cutler's evidence of very high returns to medical care spending should give pause to even the most enthusiastic advocates of health care spending restraints. Second, looking back, throughout most of the 20th century the United States was a welfare state laggard in old-age pensions, but a leader in the provision of mass public education. (Heidenheimer & Layson, 1982; Lindert, 2004). Would the country have been better off to spend less on education and more on pensions? Based on the well-documented high returns to education (Card, 2001), we suspect not.

This brief discussion, while suggestive, is not a substitute for a more comprehensive analysis that would involve addressing other questions such as, "To what extent will either national health insurance or the elimination of first dollar coverage in health insurance, or any other alternative actually restrain the growth in health care costs?" and "To what extent will these 'cures' reduce the quantity and quality of health care services?" Incorporating in-kind transfers into the analysis of welfare state spending and inequality, however, raises these kinds of questions and is a necessary first step in analyzing these kinds of trade-offs across welfare state domains.



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## ACKNOWLEDGMENTS

The authors would like to thank Anthony Atkinson, Sheldon Danziger, Andrea Brandolini, Eugene Steuerle, Lars Osberg, Ron Lee, Nancy Folbre, Christopher Jencks, Henry Brady, William Gale, Sara McLanahan, Miles Corak, four anonymous referees, the JPAM editor; the MacArthur Network on the Family and the Economy (August 2004), the Certossa Symposium on the Welfare State (Siena, Italy, September 2004), the APPAM and Levy Conferences (October 2004); and seminar participants at the University of Michigan, University of Chicago, University of Utah, UCLA, for comments and suggestions. Joseph Marchand, Marcia Meyers, Janet Gornick, Marilyn Sinkewicz, and Jumin Kim provided excellent assistance with data gathering and preparation and Mary Santy, Martha Bonney, Kim Desmond, Adrian Austin, and Kati Foley provided excellent assistance with manuscript preparation. Partial support was provided by the Ford Foundation, the MacArthur Foundation Network on the Family and the Economy, the LIS member countries, the Center for Advanced Study in the Behavioral Sciences, the Hewlett Foundation, and the Russell Sage Foundation. All remaining errors of commission and omission are the fault of the authors.

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**Table A-1.** Health benefits per person and education benefits per beneficiary by country.

Country	Year	Health Care <sup>1</sup>		Education	
		(OECD &/Person)	Elementary	Secondary	ECE
Australia	1994	\$1,063	\$2,810	\$4,530	na
Belgium	1997	1,420	3,633	5,570	3,135
Canada	1997	1,532	5,000	5,900	2,089
Finland	2000	1,276	4,136	6,079	2,666
France	1994	1,398	3,222	5,761	4,030
Germany	2000	2,086	3,929	6,672	2,010
Netherlands	1999	1,461	4,162	5,670	2,537
Sweden	2000	1,866	5,879	5,973	2,291
United Kingdom	1999	1,371	3,627	5,608	2,353
United States	2000	3,175	6,912	8,537	113
Overall all nation average benefit across all types of beneficiaries		\$1,719	\$4,331	\$6,030	\$2,469

Source: OECD.

<sup>1</sup> Includes OECD public subsidies, plus, for US, employer and other third-party subsidies.

**Table A-2.** Tax structures as percentage of total tax receipts, 1999.

	Personal Income Tax	Corporate Income Tax	Social Security Contributions		Taxes on Goods and Services	Other Taxes
			Employees	Employers		
Australia	43.3	15.9	0.0	0.0	25.0	15.8
Belgium	30.6	7.9	9.7	19.3	25.4	7.1
Canada	38.1	9.8	5.3	8.0	24.7	14.1
Finland	31.9	9.1	4.3	20.1	31.0	3.6
France	17.6	6.4	8.8	25.0	26.8	15.4
Germany	25.1	4.8	17.3	19.3	28.0	5.5
Netherlands	15.2	10.1	27.6*	11.6	28.0	7.5
Sweden	35.6	6.0	5.8	19.1	21.4	12.1
UK	28.8	10.4	7.3	9.7	32.3	11.5
US	40.7	8.3	10.5	12.2	16.4	11.9

Note: \*Including self-employment or non-employed.

Sources: OECD in Figures Statistics on the Member Countries, 2002. Revenue Statistics, 1965–2000, OECD, Paris, 2001; Taxing Wages, 2000–2001, OECD Paris, 2002; OECD Tax Database; Centre for Tax Policy and Administration, DAF.