After Death Do Us Part: An Analysis of the Economic Well being of Widows in Four Countries*

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Abstract

Using newly matched longitudinal data from the United States, Germany, Great Britain and Canada, we show that despite dramatically different social welfare systems, the change in the average woman's economic well being in these countries following the death of her husband is remarkably similar. While the United States has the greatest share of women who experience dramatic declines in well being, most were in the upper part of the income distribution prior to their husband's death. The mean household size-adjusted replacement rate for women in the lower tail of the distribution prior to widowhood rises substantially in all four countries.

The primary source of income in most households comes from labor earnings. Researchers who investigate the economic well being of households following a worker's death often focus on how social security programs replace lost earnings. By focusing on benefits from a specific program, these studies attempt to gauge the potential income available to households after a worker's death. A lack of comparable data, however, often restricts cross-national studies of how women fare after the death of their husband to two types of comparisons.[1] One type uses a hypothetical average worker's earnings history and that worker's subsequent social security benefits across various countries (See Gruber and Wise, 2000). The other type uses cross-sectional data from various countries to compare the economic well being of married women and widows of a given age. (See Yamada and Casey, 2001 and other studies using cross-sectional data from the Luxembourg Income Study www.lisproject.org/publications/wpapersentire.htm). More sophisticated cross-national studies use synthetic cohort analysis to measure the changes in a cohort's economic well being as it ages and becomes more dominated by widows. (See Williamson and Smeeding, 2002.)

Such cross-national comparisons are of limited value, especially when their intent is to show, across industrial societies, the relative economic risk faced by a wife after the death of her husband. These limitations arise, first, because the studies may fail to recognize variation in the importance of social security benefit programs or any other government cash transfer program in "income replacement" across countries and second, because the studies are unable to trace changes in the economic well being of actual women following the death of their husband.[2]

In this paper we take advantage of a newly expanded source of cross-national panel data, the Cross-National Equivalent File (CNEF), which contains comparable socio-economic

information on households in four modern OECD countries (United States, Germany, Great Britain, and Canada). We use these data to trace the economic well being of women following the death of their husband.[3] We find that while there are substantial differences across the four countries in how income from specific sources change following a husband's death, especially with respect to the mix of income from government and private sources, the overall pattern of replacement rates across the four countries is remarkably similar.

Data

Researchers at Cornell University, along with colleagues from the Survey Research Center at the University of Michigan, the German Institute for Economic Research (DIW) in Berlin, the Economic and Social Research Council Research Centre at the University of Essex, and Statistics Canada in Ottawa, have developed and tested algorithms that place information from the United States Panel Study of Income Dynamics (PSID), the German Socio-Economic Panel (GSOEP), the British Household Panel Study (BHPS) and the Canadian Survey of Labour and Income Dynamics (SLID) into a framework of comparably defined variables for use in cross-national research. The result of these efforts is a longitudinal micro-database known as the Cross-National Equivalent File (CNEF). This file provides a set of constructed variables (e.g., net-of-tax household income, estimates of annual taxes paid by respondents, etc.) that are not immediately available in the original surveys. The CNEF data file currently contains data from 1980 to 1997 for the United States, from 1984 to 2000 for Germany, from 1991 to 2000 for Great Britain and from 1993 to 2000 for Canada.[4] The CNEF data include standard demographic information, household income and its components, and individual information on employment and labor earnings. The CNEF data file is updated annually with additional years of the panels

and newly created comparable variables. (For a fuller discussion of these data see Burkhauser, Butrica, Daly, and Lillard, 2001).

We take full advantage of CNEF by using an event history based longitudinal sample design to examine the economic well being of a women's household prior to and following the death of her husband. Because the death of a spouse is a relatively rare event, even at older ages in these long running longitudinal data sets, the number of deaths we are able to observe is modest. Our sample consists of the households of 846 United States, 450 German, 216 United Kingdom, and 473 Canadian women whose husbands died sometime during the life of the panel.[5] To measure changes in the economic well being of the widow's household, we track all sources of household income. Because the members of the household of the women we follow will change over time (e.g. her husband dies, she moves in with relatives, etc.), our unit of analysis, which we follow over all periods of our analysis, is the woman who becomes widowed.

In each of our country samples we pool women by the age of their husband at death, regardless of the calendar year in which the death occurs. To do so, we realign our calendar year data into an event history framework, where the event occurs in her husband's year of death (t). We then assign her husband's age at survey interview year minus 1 as his age in year (t). To avoid complications associated with comparing the economic well being of women, whose husband die in different months of a given year, our analysis will focus on economic well being in the year before and the year after her husband's death. Our data include income years 1970 through 1997 for the United States Panel of Study Income Dynamics (PSID), 1984 through 2000 for the German Socio-Economic Panel (GSOEP), 1991 through 2000 for the British Household Panel Study (BHPS), and 1993 through 2000 for the Canadian Survey of Labour and Income Dynamics (SLID).

Sources of Household Income

Each country in our sample has a network of government programs that offset lost labor earnings and provide some level of income protection for its non-working citizens. In an unpublished Appendix available from the authors we describe in detail each country's programs and how we have categorized them. We categorize income from public sources as either social security or other government cash transfer programs. Defining "equivalent" categories across countries is not easy and necessarily involves somewhat arbitrary judgments. Here we use the United States Old-Age, Survivors and Disability Insurance (OASDI) program as our template and compare it to programs with similar goals in our other three countries. To be included in our social security category, a benefit had to be based on a *quid pro quo*. That is, a person's retirement or disability benefit must be related to that person's past contributions (taxes) paid into the system. In all four countries, earnings lost by leaving the labor market are protected by a set of programs that are primarily financed by a payroll tax on labor earnings which provide benefits related to past labor earnings. Note that the relationship need not be actuarially fair (i.e. the present discounted value of expect benefits need not equal taxes paid) but there must be a significant *quid pro quo* relationship. Second, program benefits cannot be influenced by current income. That is, the program cannot have a means test. Note that while OASI does reduce the benefits of those who have labor earnings (i.e. an earnings test) before normal retirement age, it does not reduce OASI benefits based on overall income.

This is a meaningful distinction because social security programs have historically been well-financed in all four of our countries, while other government cash transfer programs have had a much more varied level of support. Furthermore, other cash transfer programs are usually

focused on lower income households while benefits from social security programs are more evenly distributed across the income distribution. Here we will show the relative importance of social security programs in mitigating the economic risks of the death of a husband at various ages across our four countries.

Table 1 provides a detailed list of the components of all income categories used in our analysis including the names of each of the specific government programs we fold into our social security and other cash transfer programs.

Accounting for Taxes

Household income is defined as the sum of all income held by individuals residing in a single dwelling, and it is measured as post-tax, post-transfer money income. In the United States literature, pre-tax post transfer family money income, including cash government transfers, is the most common yardstick used to measure economic status. However, we are interested in making cross-national comparisons. Because taxes play a much larger role in Germany, Great Britain and Canada than in the United States, we measure household income net of income and Social Security taxes in all four countries. These tax values are available on CNEF. In addition to being a measure of each household's disposable income, this measure of income embodies the two-pronged approach governments traditionally take to redistribute income (i.e. through taxes and transfers). It thus measures economic well being after both types of traditional methods of redistribution have occurred.

To calculate this measure, we first sum all sources of income for all household members during a calendar year. To obtain a more comprehensive income measure, we add the cash value of food stamps in the United States (See Burkhauser et al., 2001 for a detailed discussion.). We

also adjust CNEF income values for inflation. These adjustments are based on the CPI-UX series for the United States and the International Monetary Fund Consumer Price Index for the other three countries. All income is converted to 1996 monetary units. The choice of year is arbitrary and our results are not affected by the choice of a different reference year.

How the Economic Well Being of Women Changes Following Their Husband's Death

In every country and in every age group, total household income declines after the husband dies. Focusing on the composition of the change in Table 2, we separately analyze the sum of income increases and income decreases across all sources of household income. In each case, we sum income losses across all sources for which mean income declined between t-1 and t+1. We similarly sum income gains across all sources for which mean income increased between t-1 and t+1. We then compute the fraction of income losses or gains from each source.[6] Income losses are reported in boldface type. The income category that accounts for the largest fraction of the sum of income increases is designated by an asterisk, as is the category that accounts for the largest fraction of the sum of income decreases. These asterisks thus mark the most important sources of income declines following the death of the husband as well as the most important source of income increases.

Similar patterns of decreases in sources of income emerge in Table 2 across countries and ages of the husband's death. When the husband dies at a younger age (aged 25-49 or 50-61) his labor earnings are the most important source of lost household income in all countries. Lost labor earnings continue to be most important in the United States and Great Britain for men who die aged 62-69. While the husband's lost earnings remain important in the other two countries at these ages, they are surpassed in importance by pension income losses in Canada and by social security losses in Germany. Only when a husband's death occurs after age 70 is his lost earnings

relatively unimportant in all countries and even then, they account for 16 percent of lost household income in the United States.

In contrast, patterns across countries or age groups in the source of household income gains in the year following the death of the husband are more varied. Somewhat surprisingly, when a husband aged 25-49 dies, gains in private sources of income are most important in offsetting lost income in all but the United States. Others' labor income is most important in Canada and Great Britain and the widow's own labor income is most important in Germany. Note that increases in others' labor income can either be an increase in the labor earnings of those in the household prior to the death of the husband or a change in household composition (e.g. a widow moves into the household of her child, a widow moves in with relatives, etc.) In the United States increases in a public source—social security—is most important. When a husband aged 50-61 dies, only in Canada is a private source most important—others' labor income. At this age in the United States and Germany reduced taxes are most important while in Great Britain social security increases are most important.

When a husband dies at even older ages, the total amount of income gains are much smaller and the source more varied. In Canada and Germany, gains from private sources dominate while in the United States and Great Britain reduced taxes dominate. Canada stands out from the other countries in that increases in income from a private source—others' labor earnings—dominates at all ages. Closer examination of the data reveals, however, that it is changes in household composition rather than increases in the labor earning of other household members at the time of the husband's death that is causing this increase.[7]

Evaluating the economic well being of individuals in households of different size

Although Table 2 provides insight into the pattern of income changes before and after a husband's death, it is based on household income unadjusted for the number of people in the household. To evaluate the actual change in economic well being of a women following the death of her husband, it is important to account for changes in household size that accompany death. In Table 3, we briefly demonstrate how sensitive measures of economic well being are to changes in household membership after events that, all else equal, reduce household size. A large literature exists detailing the problems associated with measuring the economic well being of individuals who live in households of different size. (See Moon and Smolensky, 1977 and Burkhauser, Smeeding and Merz, 1996 for examples of this literature).

Simply comparing a woman's net-of-tax total household income, unadjusted for household size, before and after the death of her husband, as we did in Table 2, implicitly assumes perfect returns to scale in household production. That is, for instance, it presumes the old adage that "two can live as cheaply as one" is literately true. Alternatively, assigning each survivor a per capita share of net-of-tax household income, implicitly assumes there are no returns to scale. That is, household income must be doubled if the household grows from one to two. Buhman, Rainwater, Schmaus, and Smeeding (1988) propose a formula that accommodates these two extreme assumptions. Their formula is:

$$E = D/S^e \qquad (1)$$

where an individual's equivalent income (E) equals total household income (D) divided by household size (S) raised to the power (e). Assumptions about economies of scale in household production or consumption are captured in the value one adopts for (e). At one extreme, when (e) equals 1, no economies of scale exist. Operationally, per capita income is assigned to each

person in the household. At the other extreme, when (e) equals zero, economies of scale are perfect. Operationally, each person is assigned equivalent income exactly equal to household income.

Burkhauser, Smeeding and Merz (1996) show the sensitivity of income inequality and poverty measures to variations in the value of (e) but recognize that economic theory does not suggest a particular value. They point out, however, that in the international literature researchers commonly set (e) equal to 0.5.

In Table 3, we show how the value chosen for (e) affects the inference one draws about economic well being from measures of household income before and after the death of a spouse. We compare total household income after taxes and government transfers (hereafter we refer to this measure as "post-government household income"). We compare post-government household income in the year prior to the husband's death (t-1) to income in the year following the husband's death (t+1) using alternative values of (e). Higher values of (e) reduce the post-government household income of each individual in the household. More importantly for our purpose, mean household size-adjusted post-government income in (t+1) relative to mean household size-adjusted post-government income in (t-1) varies dramatically with the choice of (e). When (e) equals zero the widow's household size-adjusted income falls in all countries following her husband's death. This result is found in Table 3. At the other extreme, (e) equals 1; the widow's household size-adjusted income rises for women in all of the age groups in each country.

Table 3 shows that differences in the household size-adjusted income ratios across values of (e) are in general greater than the differences across age groups within a country or within an age group across countries. Burkhauser, Smeeding and Merz (1996) have shown that the choice

of (e) does not have a substantial effect when one compares income distributions or poverty rates across countries. However, they note that the choice of (e) can have dramatic effects on the demographic characteristics of households that are found in the lower end of the income distribution. For instance, because older persons live in smaller households, the smaller the value of (e) (i.e. the higher the assumed returns to scale) used to estimate equivalized income, the older will be the poverty population. Table 3 provides evidence of a corollary to this rule. The smaller the value of (e) used to estimate equivalized income, following the death of her husband, the greater is the drop in measured economic well being of the widow's household. In everything that follows we use an (e) value of 0.5.

Comparing social security and household size-adjusted replacement rates across countries

Table 4 provides estimates of how the median wife's economic well being changes after the death of her husband using two different measures of income.[8] Most cross-national studies compare the rate at which particular programs replace labor earnings after some event. For example, how much of past labor earnings are replaced by social security benefits. In Table 4 we compare not only the rate at which labor earnings are replaced by social security benefits but also the ratio of total household size-adjusted income after death to the total household size-adjusted income before death. As a measure of economic well being, the replacement rate of total household income is preferred to the replacement rate associated with social security benefits because total household income (adjusted for household size) more completely reflects the monetary resources from which widows can consume.

In Table 4, we first calculate for each household the ratio of household size-adjusted social security income in t+1 to the sum of household size-adjusted social security benefits and husband's labor earnings in t-1. (See Table 1 for a list of these programs.) This ratio

approximates the replacement rate concept used in the simulations typically done to measure the degree to which social security benefits replaces lost earnings.

In all four countries, social security benefits provide substantial protection against income loss for the median women following the death of her husband at older ages. The United States provides the highest social security replacement rate in the age 70 and over group, but the differences across countries are small. For women whose husband died between the age of 62 and 69, an age range over which labor force participation of men in these countries varies quite a bit, the differences in replacement rates are far greater. In Canada the replacement rate is 0.92, while the United States replacement rate is only 0.67.

In all four countries the social security replacement rates are much smaller for the median widow at younger ages than they are at older ages. The replacement rate is low for women whose husbands die at relatively young ages largely because survivors do not automatically receive social security benefits. In the United States, for example, social security benefits are provided to women whose husband dies before age 62 only if there is a surviving child. Consequently, the median United States widow whose husband dies between ages 50 and 61 receives no social security benefits.

By contrast, in the other countries, the median widow in the aged 50-61 group gets more of her husband's labor income replaced by social insurance benefits. In Germany, widows and widowers under the age of 45 receive 25 percent of their deceased spouse's covered workers pension (or estimated pension). Those aged 45 and above receive 60 percent. In Great Britain widows qualify for social security benefits (National Insurance benefits) at any age as long as their husband worked. The Canadian social security program pays survivor benefits to widows and widowers in this age group immediately after the death of a covered worker. Benefits are

based on the worker's accrued contributions to the Canada Pension Plan/Quebec Pension Plan. While median replacement rates in this age group in all three countries are much lower than at older ages, they are still substantially above the median value for the United States when a husband dies at this age.

This relative difference is much less the case when a husband dies at ages 25-49. Median replacement rates are 0.41 in the United States. This higher median reflects the fact that these widows are much more likely to have dependent children living with them who are eligible for social security benefits. This makes the widow eligible for mothers' benefits. When a husband dies at this age, United States social security replacement rates substantially exceed those of these other countries.

This detailed discussion of variations in social security protection across the age distribution in our four countries suggests that when one uses social security benefit replacement rates as the measure of economic well being, women in all countries do less well when their husband dies at a younger age. In the United States, a woman whose husband dies in the years just before early social security retirement age or at ages 62-69 appears to experience relatively large declines in her economic well being relative to widows in other countries. In contrast, a woman whose husband dies at age 70 or older, maintains her economic well being to about the same degree in all four countries.

But as noted above, the replacement rate of total post-government household income provides a more complete understanding of how a woman's economic well being changes after the death of her husband than does the social security benefit replacement rate. As can be seen in Table 4, the substantial difference in replacement rates across age and in each country is dramatically narrowed. In all four countries the household income replacement rates are much

larger than the social security replacement rates at younger ages and are almost always larger at older ages. Even more important, from the perspective of comparing replacement rates across countries, the range of the post-government household income replacement rates is much smaller across the four countries at all ages than is the range of the social security benefit replacement rates.

Differences in the Distribution of Replacement Rates Across Countries

The similarity across countries in the household size-adjusted replacement rate of the median widow in each age group and country found in Table 4 could mask substantial differences in these rates across the income distribution. It is to this question that we now turn. Because median replacement rates do not vary much across the age distribution, for each country we pool all widows regardless of the age of their husband at death to preserve sample size. We also continue to use the replacement rate of post-government household income adjusted for household size using an (e) equal to 0.5.

In Figure 1 we plot the frequency distribution of replacement rates across six replacement rate categories. The six categories are 0 to 49 percent, 50 to 74 percent, 75 to 99 percent, 100 to 124 percent, 125 to 149 percent, and 150 percent or more. In each case the replacement rate refers to the ratio of post-government household size-adjusted income in the year after her husband's death to post-government household size-adjusted income in the year before her husband's death.

The fraction of widows in each category is similar across the four countries. The modal category in all four countries has a replacement rate between .75 and .99. The vast majority of women in all four countries have replacement rate of .75 or more. But a non-trivial minority of women in all countries experience larger declines in their household size-adjusted income

following the death of their husband. The United States has the highest share of widows whose replacement rates are in the two lowest replacement rate categories. About 13 percent of widows in the United States experience a decline in their household size-adjusted income of more than one-half. This fraction is almost twice the share of widows who experience such declines in the other three countries. By contrast, the share of widows with replacement rates of between 0.50 and 0.75 is closer in the four countries.

Since a substantial fraction of widows are in the lower tail of the replacement rate distribution in all countries and especially in the United States, it is important to see where they were in the household income distribution prior to the death of their husband. Figure 2 shows the mean replacement rate by quintile of household size-adjusted income of women in the year before their husband death.

The lowest quintile of women in all four countries have replacement rate far in excess of 1. Somewhat surprisingly, the mean replacement rate in each country lies between 1.30 and 1.54. Hence we find that in all four countries the household size-adjusted resources available to widows after the death of their husband in the bottom tail of the distribution actually rise. This rise in resources may in part simply be due to regression to the mean but it is also to some degree related to a social safety net in all four countries that provides minimum cash transfers to widows. Mean replacement rates tend to fall in all countries at higher income quintiles, with little differences in within-quintile replacement rates across the four countries. Women in the highest income quintiles prior to their husband's death experienced the greatest fall in their relative income in all four countries. This decline at the upper tail of the distribution is again likely to be in part due to regression to the mean but also to the fact that social security and other

government transfer programs are targeted toward the middle and lower ends of the income distribution.[9]

Table 5 provides a final look at the distribution of replacement rate outcomes across initial income quintiles. It provides a within-quintile frequency distribution across the four countries. Sample sizes are relatively small but the results suggest that there are few dramatic drops in replacement rates within the lower income quintiles in all four countries. It is among women whose household income prior to their husband's death places them in the higher quintiles that sharp declines are more likely in the United States and to a lesser degree in other countries.

Hence, while the overall replacement rates of women in the year following the death of their husband varies more in the United States than in other countries, the bulk of the dramatic drops in replacement rates observed in the United States and to a lesser degree in other countries come from women in households in higher income quintiles.

Conclusions

Lack of comparable multi-period data has made it difficult to determine how social security and other sources of income change for women following the death of their husband. Using longitudinal data from CNEF, not only are we able to trace the change in the household income of a woman prior to and following the death of her husband across four countries—but also the source of that income change.

In all four countries, mean household income for women, unadjusted for household size falls following the death of their husband. The main source of this decline is the same in all countries—his lost labor earnings at younger ages, his lost social security or pension income at

older ages. Patterns in the source of the offsetting increase of income are less clear-cut. In general increased income from private sources—labor earnings of the widow or other household members--dominate at younger ages while income from public sources—social security or reduced taxes--dominate at older ages. Given this wide variation in the main source of offsetting income gains across the husband's age at death and country, it is important to focus on how the widow's entire household income changes after the death of her husband, rather than on the replacement rate of her husband's lost earnings by social security benefits, in making cross-national comparisons of how the economic well being of women change following the death of their husband.

Furthermore, we show that because the number of people living in a woman's household systematically falls following the death of her husband, comparisons of her economic well being must control for this change. Replacement rates vary more across assumptions about household returns to scale than they do across countries, holding returns to scale constant.

Using an (e) equal to 0.50, we show that the median woman's social security replacement rate is uniformly high when her husband dies at ages 70 and over in all four countries, much more varied when he dies between ages 62 and 69, and much lower when he dies at younger ages in all four countries. But this variation across age and country is reduced substantially, once a broader household size-adjusted income replacement rate measure is used. While the median woman in all four countries still experiences a greater decline in her economic well being, if her husband dies at a younger ages, the difference is much smaller than implied by social insurance replacement rates, as is the difference across countries. The across-country difference in household size-adjusted income is even smaller at older age. The economic loss, measured by total household size-adjusted income is much less and much less varied than the loss implied by

social security replacement rates or household income replacement rates unadjusted by household size both across countries and across the age of a husband's death.

Measures of replacement rates such as the mean or median can obscure substantial differences in the distribution of replacement outcomes across countries. We show that the distribution of replacements rates is greater in the United States than in other countries and that United States women are more likely to experience a greater than 50 percent decline in their household size-adjusted income following the death of their husband than widows in the other countries. However, the mean replacement rates for women in the lower tail of the distribution who become widows in all four countries are between 1.30 and 1.54. Large declines in replacement rates are more likely to be experienced by women who were in the upper tail of the distribution in all countries, especially in the United States.

The major finding of this paper is that, across countries with widely different mixes of public and private support for widows, the change in the economic well being of women following the death of their husband is remarkable similar. Differences in outcomes across the husband's age at death appear to be greater than those across country of residence.

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Table 1. Components of Income Categories

Income Category	United States	Germany	Great Britain	Canada
Private sources				
Labor income	Includes -wages and salaries -75% of positive farm income -75% of business income -reported earnings of self-employed	Includes -wages and salaries -reported earnings of self-employed	Includes -wages and salaries -reported earnings of self-employed	Includes -wages and salaries -net income of farm owners-operators -net income of owner-operators of unincorporated businesses
Husband	Labor earnings of the husband in the years before is death			
Survivor	Labor earnings of the widow			
Others[1]	Labor earnings of all other household members			
Private transfers	Income of the husband and wife from: -child support -help from relatives -other transfer income	Income from persons not in the household in the previous year	Income of all household members from: -education grants -sickness insurance -maintenance payments -foster allowance -payments from trade unions/friendly societies -non resident family members	Income of all household members from: -alimony and child support (including court-ordered) -other taxable transfer income
Retirement plans	Income of all household members from: -Veterans' pensions -other retirement income -employer pensions -annuity income	Income of all household members from: -Supplementary pensions for public sector employees (not civil servants) -Company pensions -all other pension income	Income of all household members from: -pensions from previous employer -pensions from spouse's ex-employer -private pension or annuity -widow or war widows pension -widowed mothers allowance	Income of all household members from: -employer pensions -annuities from Registered Retirement Savings Plans (RRSP) -withdrawals from Registered Retirement Income Funds (RRIF)

Table 1. Continued

Income Category	United States	Germany	Great Britain	Canada
Income from assets	The sum of income of the husband and wife's: -asset portion of farm income -asset portion of income from unincorporated business -asset portion of income from farming or market gardening -asset portion of income from roomers -rent, and income of all household members from: -dividends, interest, trust funds, and royalties	Household income from: -Dividends -Interest -Rent (minus operating and maintenance costs)	Income of all household members from: -Interest, dividends, annuities -Rent from boarders or lodgers -Rent from any other property	Income of all household members from: -Interest -net dividends -other investment income
Public sources				
Social Security	Income of all household members from: -Old-Age Insurance -Disability Insurance -Survivors Insurance	Income of all household members from the mandatory retirement insurance program (Gesetzliche Rentenversicherung) and related programs: -Old-Age pensions -Invalidity pensions -Miner pension -Farmer pension -War victim pension -Survivors pensions (widows and orphans) -Civil servant pensions -Worker accident pensions	Income of all household members from: -National Insurance retirement pension	Income of all household members from: -Old-Age Security -Guaranteed Income Supplement -Survivors Allowance -Spouse's Allowance -Canada/Quebec Pension Plan

Table 1. Continued

Income Category	United States	Germany	Great Britain	Canada
Other Cash Transfers	Income of all household members from: -Unemployment Insurance -Worker's Compensation -Aid to Families with Dependent Children (AFDC)/Temporary Assistance to Needy Families (TANF) -Supplemental Security Income (SSI) -Bonus value of Food Stamps -Other welfare income	Income of all household members from: -Unemployment Insurance -Unemployment relief -Student assistance -Maternity allowance -Subsistence allowance -Early retirement subsidy -Housing subsidy -Child allowance -Support for the care of sick family members -Nursing home allowance	Income of all household members from: -Severe disablement allowance -Industrial Injury allowance -Attendance allowance -Mobility allowance -Invalid care allowance -War disability pension -Disability living allowance -Disability working allowance -Incapacity benefit -Disability living allowance -Income support (IS) -Unemployment benefit (UB) -National Insurance sickness benefit (not employer's sick pay) -Child benefit -One parent benefit -Family credit -Maternity allowance -Housing benefit (rent rebate or rent allowance) -Council tax benefit (community charge benefit) -Other state benefit -Job Seekers Allowance -Educational grant -Foster allowance -Invalidity pension	Income of all household members from: -Canada Child Tax Benefit -Social Assistance -Employment Insurance -Worker's Compensation -Goods and Services Tax Credit -Provincial Tax Credits

Table 1. Continued

Income Category	United States	Germany	Great Britain	Canada
Taxes	Estimated total household taxes, including: -Social Security contributions (payroll taxes) -State taxes -Federal taxes	Estimated total household taxes, including: -Annual social security contributions -The sum of annual individual taxes for all household members -Annual solidarity surplus tax	Estimated total household taxes, including: -Income tax (local taxes not estimated) -National insurance contributions -pension contributions	Actual total household taxes, including: -Federal taxes -Provincial taxes
Net-of-Tax Household Income	Sum of all income components - taxes			

Sources: Disaggregated by the authors based on data from the Cross-National Equivalent File Codebook 1980-1998, Panel Study of Income Dynamics Users Manuals 1980-1997, German Socio-Economic Panel SOEPINFO 1984-1998, British Household Panel Survey User Manual Volumes A-H, Codebook prepared for Canadian Survey of Labour and Income Dynamics portion of Cross-National Equivalent File Codebook, 1998.

Table 2. Fraction of Increase or Decrease in Widow's Mean Household Income After Husband's Death by Source, Country, and Age at Death

Income Source	Aged 25 through 49				Aged 50 through 61			
	United States	Germany	Great Britain	Canada	United States	Germany	Great Britain	Canada
Private Sources								
Survivor's Labor Income	0.10	0.36*	0.09	**0.17**	0.08	**0.14**	**0.00**	**0.30**
Deceased's Labor Income	**0.99***	**0.94***	**1.00***	**0.83***	**0.86***	**0.79***	**0.98***	**0.54***
Others' Labor Income	0.01	0.04	0.54*	0.33*	**0.07**	**0.05**	0.09	0.47*
Private Transfers	**0.01**	0.01	0.02	0.29	**0.02**	0.06	0.05	**0.00**
Private Pensions	0.02	0.13	0.10	0.07	**0.01**	0.16	0.07	**0.11**
Assets	0.22	0.02	0.02	0.06	0.39	**0.02**	0.12	0.07
Public Sources								
Transfers	**0.00**	**0.06**	0.01	0.00	**0.02**	0.04	**0.02**	**0.04**
Social Security	0.37*	0.20	0.14	0.16	**0.01**	0.18	0.36*	0.07
Taxes	0.28	0.25	0.07	0.09	0.54*	0.56*	0.30	0.39
Sum of Declines in Income	**-34127**	**-47733**	**-9488**	**-29972**	**-22258**	**-36781**	**-6952**	**-28721**
Sum of Increases in Income	23481	34783	8862	15752	6723	20153	5221	11786
Net Decline/Increase	**-10646**	**-12950**	**-626**	**-14220**	**-15535**	**-16628**	**-1732**	**-16935**

	Aged 62 through 69				Aged 70 and over			
Private Sources								
Survivor's Labor Income	**0.07**	0.59*	0.06	**0.06**	**0.04**	0.30	**0.02**	0.20
Deceased's Labor Income	**0.59***	**0.32**	**0.30***	**0.22**	**0.16**	**0.11**	**0.01**	**0.02**
Others' Labor Income	0.23	0.10	**0.26**	0.82*	**0.02**	**0.01**	**0.08**	0.80*
Private Transfers	**0.01**	**0.01**	**0.00**	**0.02**	**0.02**	**0.00**	0.02	**0.01**
Private Pensions	**0.20**	**0.01**	**0.26**	**0.31***	**0.17**	**0.06**	**0.18**	**0.31***
Assets	0.16	0.30	**0.10**	**0.11**	**0.20**	0.68*	**0.15**	**0.07**
Public Sources								
Transfers	**0.01**	**0.00**	**0.08**	**0.11**	**0.01**	0.02	**0.29***	**0.30**
Social Security	**0.13**	**0.55***	0.32	**0.16**	**0.38***	**0.70***	**0.27**	**0.25**
Taxes	0.61*	0.10	0.61*	0.18	1.00*	0.11	0.98*	**0.04**
Sum of Declines in Income	**-19596**	**-18729**	**-8919**	**-11056**	**-10170**	**-15036**	**-7764**	**-11024**
Sum of Increases in Income	5259	5555	1585	4684	824	4687	133	3274
Net Decline/Increase	**-14337**	**-13174**	**-7334**	**-6372**	**-9346**	**-10349**	**-7630**	**-7750**

Source: Based on yearly information from the year prior to the year following the death of a woman's husband. Authors' calculations from the Panel Study of Income Dynamics 1970-1997, German Socio-Economic Panel 1984-2000, British Household Panel Study, 1991-2000, and Canadian Survey of Labour and Income Dynamics 1993-2000.

Notes: An asterisk (*) denotes the income source that accounts for the largest fraction either the sum of increases in income or the sum of decreases in income between year t-1 and t+1. Figures in boldface type indicate sources of income that declined between t-1 and t+1. Figures in regular type indicate sources of income that increased between t-1 and t+1. This is an unbalanced panel. Sample size varies across years. A detailed list of the income types included in each category is reported in Table 1. Mean values can be found in Appendix Tables 1A through 4A. Sample sizes can be found in Appendix Table 5A. No adjustments made for household size.

Table 3. Widows' Mean Post-Government Household Size-Adjusted Income Before and After the Death of Their Husband by Country and Various Returns-to-Scale Values

	Aged 25-49			Aged 50-61			Aged 62-69			Aged 70+		
Post-Government Income	**t-1**	**t+1**	**Ratio (t+1/t-1)**	**t-1**	**t+1**	**Ratio (t+1/t-1)**	**t-1**	**t+1**	**Ratio (t+1/t-1)**	**t-1**	**t+1**	**Ratio (t+1/t-1)**
United States[a]												
e=0	40450	29804	.74	42779	27244	.64	35809	21473	.60	28828	19482	.68
e=.5	21100	18235	.86	25430	21235	.84	23934	18985	.79	19461	18019	.93
e=1	11345	11836	1.04	15693	17682	1.13	16178	17352	1.07	13327	17107	1.28
Germany[b]												
e=0	53968	41018	.76	56289	40122	.71	45536	33567	.74	39797	29538	.74
e=.5	29317	26479	.90	34221	31393	.92	30391	30295	1.00	27013	27777	1.03
e=1	16443	18486	1.12	21164	25543	1.21	20495	28108	1.37	18502	26660	1.44
Great Britain[c]												
e=0	18196	17570	.97	19448	17716	.91	20023	12689	.63	18786	11156	.59
e=.5	10159	11530	1.13	11751	13505	1.15	13105	11344	.87	12931	10323	.80
e=1	5823	7982	1.37	7330	11111	1.52	8695	10463	1.20	8979	9798	1.09
Canada[d]												
e=0	50623	36403	.72	47506	30570	.64	32283	25912	.80	30679	22929	.75
e=.5	26775	23386	.87	28725	23123	.80	21495	22149	1.03	21088	20349	.96
e=1	14665	16284	1.11	17770	18861	1.06	14544	19996	1.37	14614	18942	1.30

Source: Authors' calculations from the Panel Study of Income Dynamics 1970-1997, German Socio-Economic Panel 1984-2000, British Household Panel Study 1991-2000, and Canadian Survey of Labour and Income Dynamics 1993-2000.

Notes: This is an unbalanced panel. Sample size varies across years. See Appendix Table 5.

[a]Constant 1996 US dollars.

[b]Constant 1996 Canadian dollars.

[c]Constant 1996 British pounds.

[d]Constant 1996 German marks.

Table 4. Median Widow's Replacement Rate in Four Countries by Husband's Age at Death (e=0.5)

	Social Security Replacement Rate				Household Size-Adjusted Replacement Rate			
Husband's Age at Death	United States	Germany	Great Britain	Canada	United States	Germany	Great Britain	Canada
25-49	.41	.17	.25	.12	.87	.80	.97	.82
50-61	.00	.37	.33	.47	.83	.83	1.04	.75
62-69	.67	.87	.84	.92	.89	.95	.92	.94
70 and older	.93	.92	.88	.86	.94	.95	.76	.96

Source: Authors' calculations from the Panel Study of Income Dynamics 1970-1997, German Socio-Economic Panel 1984-2000, British Household Panel Study 1991-2000, and Canadian Survey of Labour and Income Dynamics 1993-2000.
Note: This is an unbalanced panel. Sample size varies across years. See Appendix Table 5A.

Table 5. Distribution of Household Size-Adjusted Income Replacement Rates, by Quintile in the Year Before the Husband's Death

	Replacement Rate						Mean Replacement Rate	Standard Deviation	N
Quintile by Country	**1.5 or More**	**1.25-1.49**	**1.00-1.24**	**.75-.99**	**.50-.74**	**0-.49**			
Lowest									
United States	39.0	13.2	23.7	15.7	6.3	2.1	1.48	1.0	185
Germany	22.1	17.7	22.1	23.5	8.8	5.9	1.30	0.9	68
Great Britain	10.3	35.9	18.0	25.6	7.7	2.6	1.45	0.9	39
Canada	24.2	20.0	17.2	26.0	4.0	8.5	1.54	0.9	124
2									
United States	16.6	7.5	12.8	37.9	13.7	11.6	1.10	0.8	131
Germany	5.2	13.0	28.6	37.7	7.8	7.8	1.03	0.4	77
Great Britain	10.9	13.0	15.2	28.3	30.4	2.2	.98	0.3	46
Canada	12.8	7.4	24.9	33.7	17.7	3.6	.97	1.6	93
3									
United States	12.7	4.5	21.8	20.3	29.5	11.3	.92	0.4	116
Germany	1.3	5.2	28.6	41.6	15.6	7.8	.89	0.3	77
Great Britain	5.1	0.0	12.8	53.8	18.0	10.3	.87	0.4	39
Canada	4.6	3.3	19.1	46.8	23.5	2.6	.94	0.4	73
4									
United States	6.4	6.5	19.3	30.7	17.7	19.5	.82	0.3	121
Germany	1.5	4.4	23.5	36.8	30.9	2.9	.88	0.2	68
Great Britain	0.0	4.4	13.3	44.4	33.3	4.4	.83	0.2	45
Canada	4.5	7.5	25.4	38.0	20.6	4.0	.95	0.3	97
Highest									
United States	2.7	2.2	10.1	32.6	33.7	18.7	.75	0.3	103
Germany	4.2	4.2	14.1	36.6	25.4	15.5	.82	0.3	71
Great Britain	2.1	6.4	12.8	27.7	31.9	19.2	.77	0.3	47
Canada	0.0	1.8	18.2	38.9	22.0	19.0	.78	0.3	86

Source: Authors' calculations from the Panel Study of Income Dynamics 1970-1997, German Socio-Economic Panel 1984-2000, British Household Panel Study 1991-2000, and Canadian Survey of Labour and Income Dynamics 1993-2000.

Appendix Table 1A. Mean Household Income of Widows in the United States Before and After Her Husband's Death, by Source (1996 US Dollars)

			Aged 25 through 49			
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	47166	46817	44842	13672	16644	21172
Survivor's Labor Income	6524	6744	8200	10545	12826	12402
Deceased's Labor Income	38438	38041	33826	0	0	0
Others' Labor Income	2205	2032	2817	3127	3818	8770
Private Transfers	708	168	266	26	157	518
Private Pensions	203	198	226	734	631	1072
Assets	4676	1063	1282	6477	4787	6347
Public Sources						
Transfers	1818	1100	1580	1519	1099	529
Social Security	2373	2151	2280	10940	11260	11546
Taxes	12655	11046	10027	3564	4127	5992
Post-Government	44289	40451	40450	29804	30450	35193

			Aged 50 through 61			
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	50332	49193	39230	19066	18812	21010
Survivor's Labor Income	12510	11916	12453	12967	12272	12399
Deceased's Labor Income	31559	30526	19147	0	0	0
Others' Labor Income	6263	6751	7631	6099	6540	8611
Private Transfers	406	548	931	421	309	1554
Private Pensions	3584	3281	3842	3531	3639	4323
Assets	4804	2851	3668	6273	8527	6127
Public Sources						
Transfers	513	908	806	325	567	533
Social Security	2087	2322	2924	2646	3195	3701
Taxes	12885	12313	8621	5018	6748	6182
Post-Government	48841	46830	42779	27244	28301	31065

Appendix Table 1A Continued

Income Source	t-3	t-2	t-1	t+1	t+2	t+3
			Aged 62 through 69			
Private Sources						
Total Household Labor Income	34254	24726	19920	8260	7717	5538
Survivor's Labor Income	10125	7552	7319	5917	4797	4441
Deceased's Labor Income	20972	15170	11469	0	0	0
Others' Labor Income	3157	2003	1132	2342	2921	1097
Private Transfers	293	343	582	376	240	185
Private Pensions	4468	5495	7684	3832	4197	3977
Assets	3980	3600	3594	4435	4590	4041
Public Sources						
Transfers	665	618	574	366	299	288
Social Security	5610	7741	9421	6963	6751	6936
Taxes	10038	7095	5966	2758	2774	2038
Post-Government	39281	35435	35809	21473	21020	18927

Income Source	t-3	t-2	t-1	t+1	t+2	t+3
			Aged 70 and over			
Private Sources						
Total Household Labor Income	6929	5628	4473	2234	3400	1954
Survivor's Labor Income	1690	1757	1411	1036	628	644
Deceased's Labor Income	3237	2089	1636	0	0	0
Others' Labor Income	2002	1782	1426	1197	2772	1310
Private Transfers	391	649	753	532	527	500
Private Pensions	5373	5213	4402	2713	2326	2076
Assets	12357	11636	8627	6581	8519	6681
Public Sources						
Transfers	260	226	271	190	334	185
Social Security	12149	12340	12544	8651	8547	8443
Taxes	4921	4033	2243	1420	2257	1297
Post-Government	32538	31699	28828	19482	21396	18540

Source: Authors' calculations from the Panel Study of Income Dynamics 1970-1997

Notes:

1. This is an unbalanced panel. Sample size varies across years. Sample sizes can be found in Appendix Table 5A.
2. Table 1 contains a detailed list of the income types included in each category.

Appendix Table 2A. Mean Household Income of Widows in Germany and its Sources Before and After Her Husband's Death, by Source (1996 German Marks)

			Aged 25 through 49			
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	87579	66263	65673	34512	35485	41693
Survivor's Labor Income	23920	14674	15992	28357	26318	36338
Deceased's Labor Income	60070	46365	44805	0	0	0
Others' Labor Income	3590	5223	4877	6155	9166	5355
Private Transfers	0	96	0	214	155	513
Private Pensions	0	0	0	4493	720	4969
Assets	747	384	381	994	1057	3132
Public Sources						
Transfers	3773	6226	6726	3798	3642	2490
Social Security	0	373	1287	8345	14614	7062
Taxes	26021	20013	20099	11337	10875	14750
Post-Government	66078	53330	53968	41018	44796	45109

			Aged 50 through 61			
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	68867	75290	61290	25360	19484	18204
Survivor's Labor Income	17587	16801	16787	11770	12581	11325
Deceased's Labor Income	42474	46908	29103	0	0	0
Others' Labor Income	8806	11581	15399	13591	6902	6879
Private Transfers	0	0	0	1164	1106	97
Private Pensions	1307	925	1332	4494	1658	4722
Assets	670	1453	1772	919	1185	1185
Public Sources						
Transfers	2027	1783	2171	2972	781	1044
Social Security	6709	8784	9793	13435	19454	16231
Taxes	21459	26140	19607	8223	7330	7271
Post-Government	58122	62095	56750	40122	36337	34212

Appendix Table 2A. Continued

	Aged 62 through 69					
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	26822	19614	15904	13767	13840	12777
Survivor's Labor Income	5006	4253	3013	6305	6463	5304
Deceased's Labor Income	14296	8057	6011	0	0	0
Others' Labor Income	7520	7304	6880	7462	7376	7473
Private Transfers	244	5	108	0	0	0
Private Pensions	1015	2055	2044	1808	669	742
Assets	7256	7654	4812	6493	9708	13701
Public Sources						
Transfers	980	1209	1107	1071	258	257
Social Security	22832	26404	29975	19590	20970	21371
Taxes	9512	7795	7457	9410	11447	12334
Post-Government	49635	49145	46492	33319	33997	36514

	Aged 70 and over					
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	6592	5754	6374	5939	5190	2583
Survivor's Labor Income	1103	855	746	2152	1325	951
Deceased's Labor Income	1681	1498	1726	0	0	0
Others' Labor Income	3808	3401	3875	3787	3865	1632
Private Transfers	30	225	66	5	6	34
Private Pensions	2545	1892	2074	1105	1130	1466
Assets	4107	3906	2795	5987	2922	2042
Public Sources						
Transfers	352	506	221	310	308	176
Social Security	32071	31289	32637	22071	22027	21990
Taxes	4248	3837	4252	5878	3985	2806
Post-Government	41449	39735	39889	29538	27597	25484

Source: Author's calculations from the German Socio-Economic Panel 1984-2000.

Notes:

1. This is an unbalanced panel. Sample size varies across years. Sample sizes can be found in Appendix Table 5A.
2. Table 1 contains a detailed list of the income types include in each category.

Appendix Table 3A. Mean Household Income of Widows in Great Britain Before and After Her Husband's Death, by Source (1996 British Pounds)

	Aged 25 through 49					
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	20450	22570	18193	14366	8566	6838
Survivor's Labor Income	5862	7303	6144	6982	5717	4473
Deceased's Labor Income	9456	11243	9488	0	0	0
Others' Labor Income	5132	4024	2561	7384	2849	2366
Private Transfers	133	0	13	234	186	519
Private Pensions	194	64	0	855	489	738
Assets	556	453	1030	1222	1798	539
Public Sources						
Transfers	2417	1792	2583	2686	2722	3233
Social Security	455	533	632	1850	1672	1634
Taxes	5250	5688	4255	3643	1710	1384
Post-Government	18955	19724	18196	17570	13723	12116

	Aged 50 through 61					
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	18487	17726	15323	9019	11443	9732
Survivor's Labor Income	7081	6193	5116	5100	4473	2903
Deceased's Labor Income	8805	8290	6779	0	0	0
Others' Labor Income	2601	3244	3428	3919	6970	6829
Private Transfers	76	95	57	319	172	342
Private Pensions	627	1211	1394	1768	1993	2267
Assets	751	1038	1123	1755	1916	915
Public Sources						
Transfers	2449	3368	4097	3939	3750	3951
Social Security	727	628	982	2875	2903	2479
Taxes	4395	4131	3527	1960	2485	2149
Post-Government	18722	19936	19448	17716	19692	17537

Appendix Table 3A Continued

	Aged 62 through 69					
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	7738	6470	8601	3711	4657	8716
Survivor's Labor Income	2754	2165	2387	2489	2326	2268
Deceased's Labor Income	2764	2256	3894	1222	2331	6448
Others' Labor Income	2220	2049	2320	0	0	0
Private Transfers	180	36	29	16	101	48
Private Pensions	3693	3028	3719	1427	1920	1995
Assets	2293	1753	1525	632	1266	1438
Public Sources						
Transfers	4991	4312	4849	4120	4034	3739
Social Security	2541	2832	3106	3620	3388	3649
Taxes	1658	1380	1806	838	1093	2191
Post-Government	19778	17050	20023	12689	14274	17394

	Aged 70 and over					
Income Source	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	2444	3172	2997	2099	1738	2000
Survivor's Labor Income	1143	991	888	708	527	201
Deceased's Labor Income	855	1891	1457	1391	1210	1799
Others' Labor Income	446	290	652	0	0	0
Private Transfers	57	72	41	44	31	99
Private Pensions	3323	3657	3010	1642	1525	1644
Assets	2311	2302	1845	706	949	824
Public Sources						
Transfers	5946	6217	6173	3910	4044	4096
Social Security	5130	5266	5383	3288	3289	3352
Taxes	496	723	665	534	450	528
Post-Government	18716	19962	18786	11156	11125	11488

Source: Authors' calculations from the British Household Panel Study 1991-2000.
Notes:
1. This is an unbalanced panel. Sample size varies across years. Sample sizes can be found in Appendix Table 5A.
2. Table 1 contains a detailed list of the income types included in each category.

Appendix Table 4A. Mean Household Income of Widows in Canada Before and After Her Husband's Death, by Source (1996 Canadian Dollars)

	Aged 25 through 49					
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	47687	50075	50852	26060	35994	34815
Survivor's Labor Income	18728	21884	23519	18432	24791	20403
Deceased's Labor Income	26340	24391	24885	0	0	0
Other's Labor Income	2620	3801	2448	7628	11203	14412
Private Transfers	1766	1806	4214	8769	1588	594
Private Pensions	0	533	135	1202	1188	2132
Assets	949	1594	975	1887	1383	785
Public Sources						
Transfers	3399	4469	4699	4740	3139	3157
Social security	186	1258	1426	3953	4102	3169
Taxes	10264	12084	11677	10207	8589	7550
Post -Government	43724	47652	50623	36403	38805	37102

	Aged 50 through 61					
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	27303	30152	37913	19167	18483	18302
Survivor's Labor Income	7908	10237	15685	6997	6399	8234
Deceased's Labor Income	15495	13558	15551	0	0	0
Other's Labor Income	3900	6357	6677	12170	12084	10069
Private Transfers	5867	7489	2071	1931	1092	1142
Private Pensions	3850	4597	6534	3363	4580	4783
Assets	1277	1190	1791	2623	3200	1693
Public Sources						
Transfers	3493	3096	4794	3623	3471	2670
Social security	3878	3645	4783	5660	5882	5558
Taxes	7242	9393	10380	5796	5915	5837
Post -Government	38426	40777	47506	30570	30793	28311

Appendix Table 4A Continued

	Aged 62 through 69					
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	15930	11613	6805	7486	7992	9432
Survivor's Labor Income	7166	5598	3026	2340	1585	1964
Deceased's Labor Income	7074	3719	2476	0	0	0
Other's Labor Income	1690	2296	1303	5146	6407	7467
Private Transfers	1095	1325	1365	1160	412	378
Private Pensions	10363	12813	10212	6780	5199	5490
Assets	1786	4762	3821	2553	3306	3199
Public Sources						
Transfers	7878	7756	7390	6155	6595	6458
Social security	7068	7290	7452	5698	5395	5242
Taxes	6973	6519	4762	3921	3549	4341
Post -Government	37146	39040	32283	25912	25351	25857

	Aged 70 and over					
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	1416	1290	1135	4237	4221	5564
Survivor's Labor Income	408	358	238	903	669	612
Deceased's Labor Income	521	144	171	0	0	0
Other's Labor Income	487	788	726	3335	3552	4952
Private Transfers	317	414	365	267	348	344
Private Pensions	10131	9283	8885	5481	4019	3260
Assets	5029	5203	4954	4133	4306	2403
Public Sources						
Transfers	10845	10883	11224	7911	7820	7851
Social security	7846	7672	7576	4784	4416	4027
Taxes	3675	3509	3460	3885	3059	3026
Post -Government	31909	31236	30679	22929	22071	20423

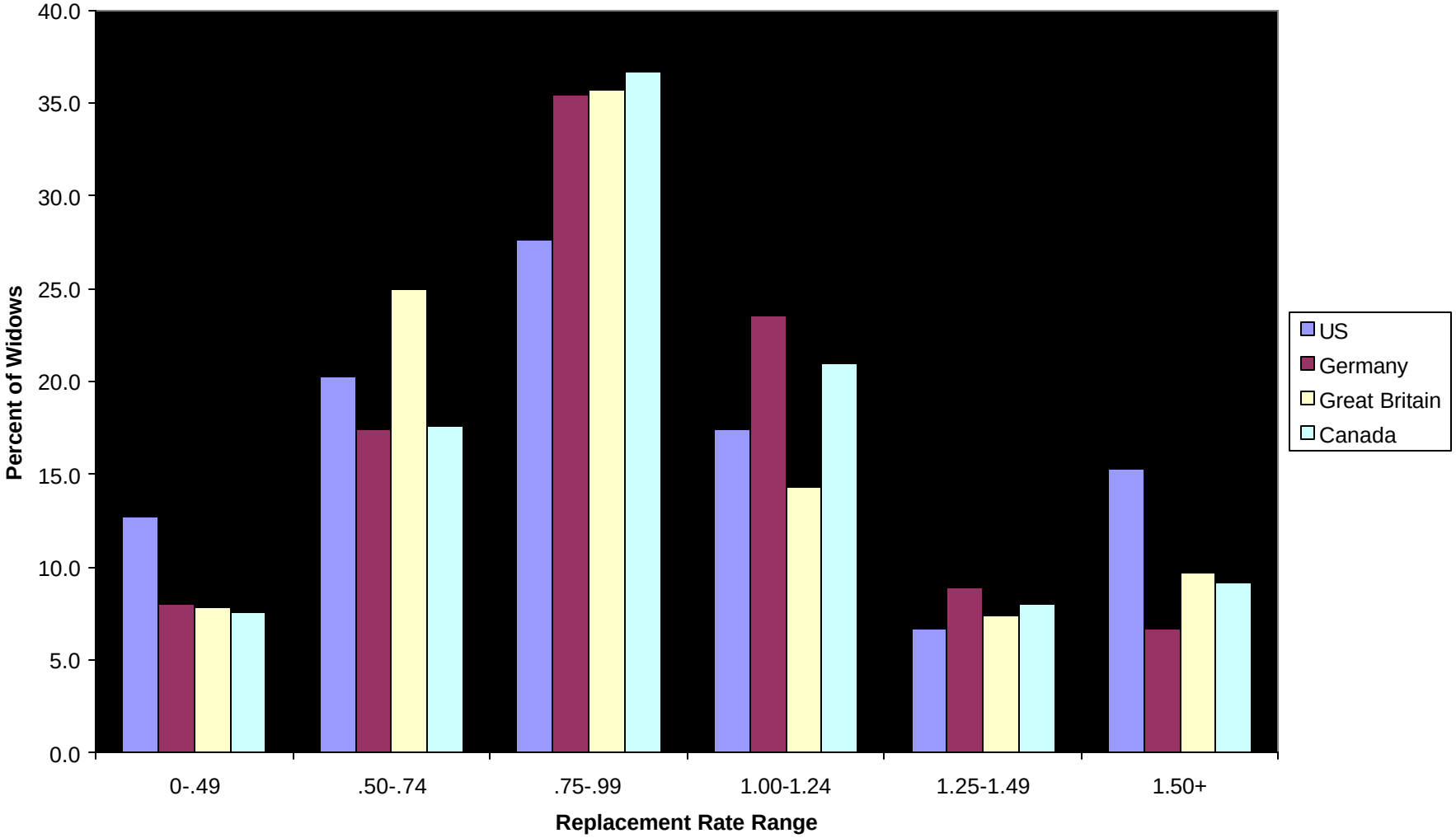
Source: Authors' calculations from the Survey of Labour and Income Dynamics 1993-1999.
Notes:
1. This is an unbalanced panel. Sample size varies across years. Sample sizes can be found in Appendix Table 5A.
2. Table 1 contains a detailed list of the income types included in each category.

Appendix Table 5A. Sample sizes for Widows' Mean Post-Government Income in Years Before and After Widowhood

	Year Relative to Year of Husband's Death							
Country/Age	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**	**Minimum**	**Maximum**
United States								
Age 25-49	76	80	80	80	71	70	70	80
Age 50-61	133	143	144	144	139	134	133	144
Age 62-69	141	147	148	148	138	127	127	148
Age 70+	270	278	279	279	249	220	220	279
Germany								
Age 25-49	30	41	48	46	39	34	30	48
Age 50-61	73	81	84	74	67	59	59	84
Age 62-69	101	108	112	95	77	66	66	112
Age 70+	171	195	206	176	154	141	141	206
Great Britain								
Age 25-49	17	22	24	19	19	14	14	24
Age 50-61	33	35	44	34	30	24	24	44
Age 62-69	23	32	36	29	24	17	17	36
Age 70+	120	140	155	134	111	89	89	155
Canada								
Age 25-49	31	46	69	64	44	31	31	69
Age 50-61	32	48	87	97	70	54	32	97
Age 62-69	52	73	108	131	93	72	52	131
Age 70+	251	343	481	405	268	184	184	481

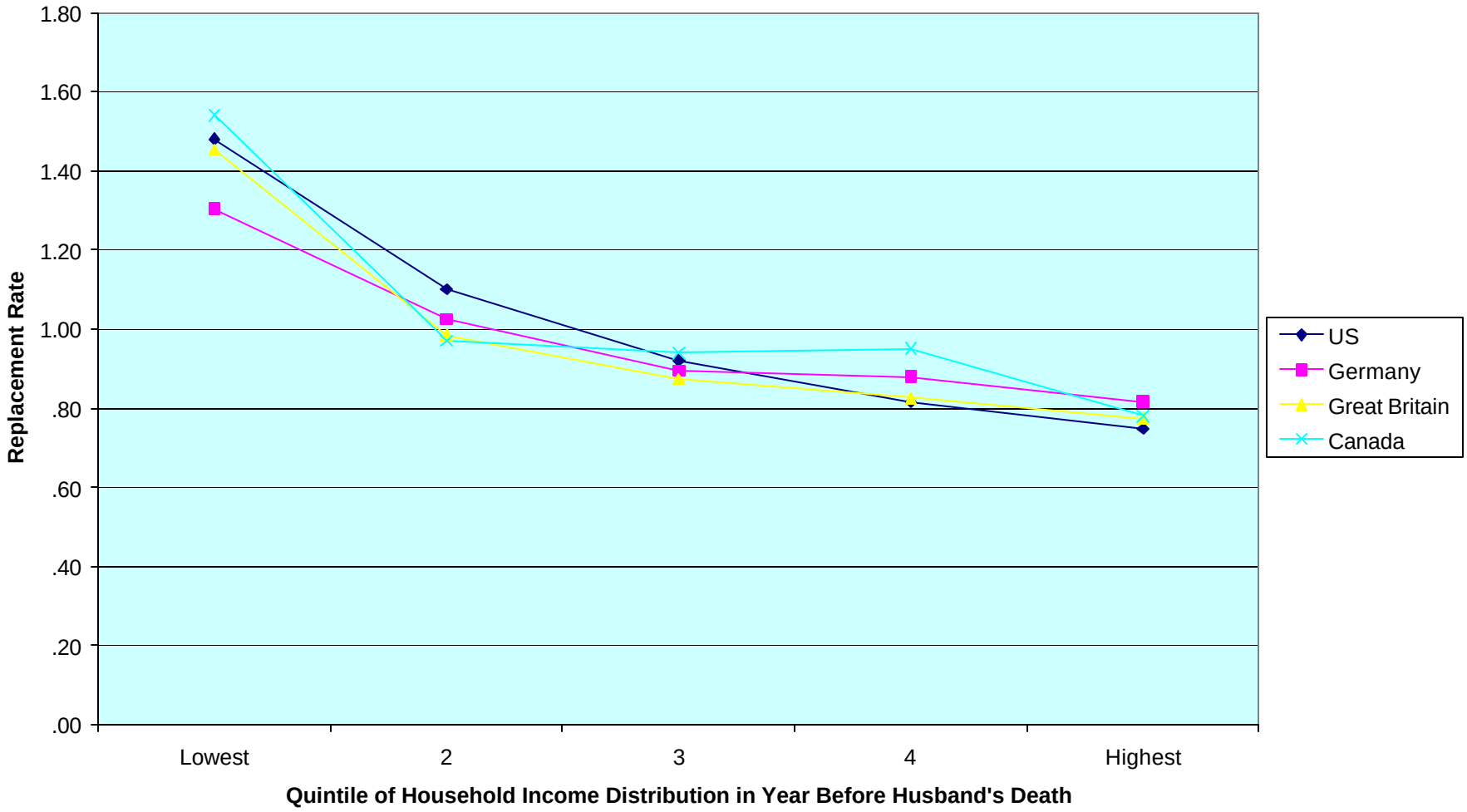
Source: Authors' calculations from Panel Study of Income Dynamics 1970-1997, German Socio-Economic Panel 1984-2000, British Household Panel Study 1991-2000, and Canadian Survey of Labour and Income Dynamics 1993-2000.

Figure 1. Distribution of Household Size-Adjusted Income Replacement Ratios, by Country



Source: Source: Authors' calculations from the Panel Study of Income Dynamics 1970-1997, German Socio-Economic Panel 1984-2000, British Household Panel Study 1991-2000, and Canadian Survey of Labour and Income Dynamics 1993-2000.

Figure 2. Mean Household Size-Adjusted Income Replacement Rate, by Quintile of Household Income Distribution, by Country



Source: Authors' calculations from the Panel Study of Income Dynamics 1970-1997, German Socio-Economics Panel 1984-2000, British Household Panel Study 1991-2000, and Candian Survey of Labour and Income Dynamics 1993-2000.

Endnotes

1. Although we are interested in how both widows and widowers fare, the number of widowers in our data is small, especially at young ages.
2. A literature tracing the actual changes in the economic well being of women following the death of their husband exists for the United States. Most recently, Haveman, Holden, Wilson and Wolfe (2003) used 10 years of administrative records data to show how much the family income of older women who were married in 1982 and single in 1991 declined and the importance of social security benefits in offsetting this decline. Burkhauser, Butler, and Holden (1991) look at this same transition using data from the Retirement History Survey for the 1970s. Burkhauser and Duncan (1989) use Panel Study of Income Dynamics (PSID) data to compare economic well being changes across several life events including widowhood over this same period. But cross-national comparisons of the economic consequences of widowhood especially across the entire age distribution are rarer. Burkhauser, Duncan, Hauser and Berntsen (1991) were the first to use data from the PSID and German Socio-Economics Panel (GSOEP) to compare the economic well being of women following a marital split but they did not have sufficient data to focus on economic consequences following the death of a spouse.
3. While we focus on the death of the husband in this paper, we have also looked at the consequences of a long-term exit from the labor force for other reasons on the economic well being of the household. (See Burkhauser, Lillard and Valenti, 2001).
4. Canadian data from 1993 to 2000 are available via remote access by special arrangement with Statistics Canada.
5. To increase our sample of widows in the PSID we add PSID data from 1970 to 1979 the CNEF-PSID data. We also used the restricted access file of the PSID that contains official

date of death records for PSID sample members who have died. These data are not available on CNEF but can be obtain through the PSID staff at the University of Michigan.

6. Appendix Tables 1A, 2A, 3A, and 4A, provide mean household income for the women in our sample and its sources for each of the three year before and the three years after the death of her husband for the United States (Table 1A), Germany (Table 2A), Great Britain (Table 3A), and Canada (Table 4A) by the age at his death. We use mean values unadjusted for household size in these tables to focus on the changes in the relative importance of various sources of income following her husband's death. In Burkhauser, Giles, Lillard, and Schwarze (2002) we produce similar tables for male and female survivors.

7. It has been argued that the increase in the generosity of social security widow benefits in the United States is a major factor in the shift of widows from living with their children to living independently following the death of their husband. (See Holden 1988, McGarry and Schoeni 2001.)

8. To reduce the influence of outliers in the data, we report the replacement rates of the median widow rather than the mean replacement rate of all widows. Using mean values would increase the levels but not change the pattern of outcome.

9. While income is a very useful measure of economic well being, information on wealth and how it changed would provide even greater incites into how the economic well being of women changed following the death of their husband. While we capture changes in income in our data, we are not able to capture changes in wealth. This is especially a problem with respect to life insurance. While we will capture the flow value from the investments purchased with life insurance payments made to a widow—e.g. the interest paid in the past year from a life insurance payment that was put in a bank account--we do not capture the

value of full life insurance payment that caused this increase in interest. This suggests that part of the reason for the fall in replacement rates we observe at higher incomes may in part be due to our failure to account for changes in the wealth caused by life insurance payouts of the returns from life insurance, especially if these funds were used to pay down debt rather than offset the husband's lost earnings.