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Abstract

Government policies attempt to mitigate the economic risks to households of major life transitions. This paper focuses on two such transitions that social security systems typically insure against—long term exits from the labor market (retirement, disability, unemployment insurance) and the death of a household head or spouse (survivor's insurance). We examine labor force exits of men at various ages in four countries--Canada, Germany, Great Britain, and the United States—using data from the Cross-National Equivalent File, a matched longitudinal data set. We focus on how average net-of-tax household income changes in the years before and after the event. We find that when one measures the change in economic well-being following a labor market exit by the fraction of lost labor earnings replaced by social security income, the decline in the household's economic well-being is substantially overstated. When we compare net-of-tax household income before and after a long term exit from the labor market, we find that such drops are much less than those implied by a social security replacement rate and that differences across countries in the average drop are much less than those based on a social security replacement rate. We find the same pattern when we focus on how net-of-tax household income changes in the years before and after the death of a head or spouse. Declines in net-of-tax household income following such a death are much lower than the decline implied by a replacement of the deceased person's labor earnings and social security benefits by their household's post-death social security income. But the size of the change in individualized net-of-tax income following the death of a head or spouse is greatly affected by assumptions used to adjust for changes in household size.

Introduction

A permanent or even long-term exit from the labor market is a threat to the household economic well-being of the worker whether caused by redundancy, old age, disability or death. Most OECD countries now have a mixture of private and public institutions to ameliorate the economic consequences of such exits. On the public side, most social insurance systems provide income to those who exit work at older ages (retirement, survivor benefits) or at younger ages because of health conditions (disability, workers' compensation, and survivor benefits). Most OECD countries also offer long-term unemployment benefits for workers of all ages as part of their social insurance system. In addition to these types of social insurance programs, which target long-term labor market workers, most OECD countries also offer an array of means-tested welfare programs. Such programs typically provide a minimum social safety net for nonworkers that may either be categorical (e.g., aged, disabled, lone parents, survivors, etc.) or universal in design. (See Aarts, Burkhauser and de Jong, 1998 for a fuller taxonomy of social welfare systems in a comparative context.)

While many studies of the economic consequences of long-term labor market exits have focused on the ameliorative role of such government programs, private institutions also play an important part in replacing lost labor market earnings. In the United States, but also in other OECD countries, when workers leave the labor force because of redundancy, disability, retirement or death their economic well-being is also supported by payments from private employer fringe-benefit packages. Furthermore, some households can use income from their accumulated wealth, from the added market work of other household members, or from life insurance settlements to offset their principal earner's lost income.

Researchers who investigate the economic well-being of households following long-term exits from the labor force often focus on how a given program (e.g., social security retirement, disability, or survivor's insurance, unemployment insurance, etc.) replaces lost earnings. This attention to specific program effects is frequently adopted in cross-national studies. By focusing on benefits from a specific program, these studies attempt to gauge the potential post-exit income available to the households of workers who experience long-term labor market exits. The lack of comparable data, however, often restricts cross-national studies to two types of comparison. Many studies compare a hypothetical average worker's earnings history and that worker's subsequent social security benefits across various countries (See Gruber and Wise, 1999). Other studies use cross-sectional data from various countries to compare the economic well-being of workers and non-workers of a given age (See the many studies using cross-sectional data from the Luxembourg Income Study www.lisproject.org/publications/wpapersentire.htm).[1]

Cross-national comparisons of these types may be of limited value, especially when their intent is to show the relative economic risk to a household of a worker's long-term labor market exit or death across industrial societies. These limitations arise, first, because the studies may fail to recognize variation in the importance of social security insurance or any other government program in "income replacement" across countries and second, because the studies are unable to trace changes in economic well-being across actual households.[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 OECD countries (Canada, Germany, Great Britain, and the United States). We use these data to trace the economic well-being of the households of men and women who exit the labor market. For our analysis of exits other than through death we

examine the economic well-being of the households of long-term employed men who experienced a permanent or long-term exit from the labor market in the 1990s. We capture long-term exits by requiring these men to have three consecutive years of employment (measured as at least 52 hours of paid market work either for one's self or others in a given year) followed by at least two years of non-employment (measured as working less than 52 hours or having zero labor earnings in a given year).[3] In our analysis of death and the economic well-being of survivors, we expand our sample to include both those in and out of the labor force at the time of their death. Hence, we examine changes in the economic well-being of a household following the death of a head or spouse regardless of their labor force status at the time of their death. We then focus on a vulnerable subset of this population and trace the consequences of the death of the spouse on the economic well-being of women as they transition from wife to widow.

Data

Researchers at Cornell University, along with colleagues from the German Institute for Economic Research in Berlin, the Survey Research Center at the University of Michigan, 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 German Socio-Economic Panel (GSOEP), the United States Panel Study of Income Dynamics (PSID), 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, a selection of household equivalent weights based on equivalence scales, 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 1994 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).

In this paper, we take full advantage of the panel nature of the CNEF data to estimate the age-specific risks of long-term non-death related labor market exits for men across the four countries in the 1990s. We then trace the consequences of such exits on household income by source. To do so, we use an event history based longitudinal sample design that allows us to examine the labor market activity and economic well-being of households prior to and following a long-term labor market exit of a male worker. Applying our definition of labor force exits, we collect a sample of 16,627 German, 8,602 British, 16,206 Canadian, and 14,614 United States observations of men at risk of a labor market exit from age 25 through 75.[5] Each of these men experienced the beginning of a long-term labor market exit sometime between 1990 and 1998.[6] We then use data from these same four countries to trace the consequences of the death of a head or spouse on the household income of surviving household members. Because the consequences vary by whether the husband or wife dies, we then focus exclusively on the economic well-being of wives following the death of their husbands. To do so, we use an unbalanced panel of men and women, age 25 and older, who died sometime during the life of the panel.[7]

To measure changes in household economic well-being, we track all sources of household income. These sources include the labor earnings of the person who exits the labor

market or dies, the labor earnings of other household members, income from employer-based pensions, other private sources, social insurance pensions, and other public transfers, as well as estimates of household taxes.[8]

Risk of Labor Market Exit By Age

Cross-sectional studies of employment compare the employment rate of random samples of men of different ages in a given year and infer exit rates across age categories or, in a more sophisticated manner, compare employment rates between matched age cells of two consecutive yearly cross-sections. Here we are able to follow the employment behavior of the same men as they age. Small sample sizes require us to pool our sample of men by age across all years of the 1990s. To do so we realign our calendar year data into an event history framework where the event begins in the last year of employment (t). We then assign the age at survey interview year minus 1 as the age of exit in year (t).[9] This approach allows us to estimate the risk of a worker experiencing a long-term labor market exit at any given age.[10] The data we use cover a sample period that is defined by the last year in which a man could be engaged in long-term employment. Our data include income years 1990 through 1997 for the GSOEP, 1990 through 1996 for the PSID, 1990 through 1997 for the BHPS, and 1993 through 1998 for the SLID.[11]

Figure 1 shows the pattern of long-term labor market exits for men aged 55 to 67.[12] Long-term age-specific exit rates vary substantially across ages and across countries. With few exceptions, long-term age-specific exit rates are highest in Germany and lowest in the United States at all ages in Figure 1. German exit rates exceed 10 percent as early as age 58 and rise rapidly to nearly 30 percent by age 61. They approach 50 percent by age 64. In contrast, United States exit rates do not hit 10 percent until age 60 and do not hit 30 percent until age 65. British exit rates remain near 10 percent until age 62 at which point they begin to rise, peaking at age 65.

Canadian exit rates reach 10 percent by age 59 and remain between 10 and 20 percent until they rise sharply at ages 64 and 65.

In the introduction of their edited volume, Gruber and Wise (1999) argue that variations in social security program rules that cause age-specific social security wealth values to vary across the life cycle may explain differences in retirement rates across modern industrial societies.[13] The individual country authors in the Gruber and Wise (1999) volume for the most part use simulated individual earning histories to demonstrate a correlation between peak changes in social security wealth across life and age-specific employment rates in their countries. Our longitudinal results are consistent with this point. Social security wealth values peak at earlier ages in Germany than in Canada, Great Britain and the United States.[14]

Economic Well-Being Before and After Long-Term Labor Market Exit

Figure 1 demonstrates that long-term labor market exit rates vary greatly across the life cycle and across our four countries. We now use our panel data to focus on how household income and its sources change as these men transition out of the workforce. Because social insurance systems tend to provide more protection to those who exit at older ages, we divide our country samples into three age groups defined by the worker's age at exit—younger workers (aged 25 through 49), middle-aged workers (aged 50 through 61), and older workers (aged 62 and over). In so doing, we show the relative importance of public and private sources of income and how important these sources are in maintaining pre-exit household income levels.

Table 1 provides information on mean post-government household income (i.e., total gross household income minus all taxes) as well as by key sources of that income for the two years before and after a labor market exit of men in our four countries in the 1990s. By definition, own labor income falls to near zero in the two years following labor market exit in all

countries.[15] Because we are interested in comparing the relative size of the various sources of income in Table 1, we use mean values for each income source and do not adjust income to account for differences in the size of the household.[16]

In the United States, decreases in the earnings of men who exit the labor force at older ages are primarily offset by almost equal increases in their household's social security and private pension income.[17] For men who exit at middle age, increases in private pension income dominate. At younger ages, neither private pension nor social security provides much protection against income loss due to long-term labor market exits.

In Germany, decreases in the labor earnings of men who exit at either older or middle ages are primarily offset by increases in social security income, although increases in other public income are also important at middle ages. At younger ages, increases in other public income dominate.

In Great Britain, decreases in the labor earnings of men who exit at older ages are almost equally offset by increases in social security and other public and private income. At middle ages, increases in private pension and other private and public income are most important. At younger ages, increases in other public and private income dominate.

In Canada, decreases in the labor earnings of men who exit at older ages are primarily offset by increases in social security and private pension income. At middle ages, increases in private pension income dominate. At younger ages, increases in other public and private income dominate.

Table 1 shows that the sources of household income that replace lost labor earnings in the years immediately following a long-term exit from the labor market vary both within a country, depending on age of exit, and across our four countries. Social security income plays an

important role in replacing the lost earnings of men who exit the labor market after age 61 in all countries, but it is far more important in Germany and Great Britain than in the United States or Canada as a share of total post-government household income. Social security income plays much less of a role for men who exit the labor force at middle ages. Only in Germany does social security continue to play a dominant role. But other public transfer programs are important for men who exit at this age, except in United States. At younger ages, other public transfers dominate in all four countries. However, in the United States, increases in other public transfers are quite small relative to the other countries. This variation in the relative importance of sources of post-exit income has important implications for interpreting various measures of "replacement rate" across countries.

Table 2 shows the relative success of social security benefits (i.e., total household post-exit social security benefits divided by pre-exit own labor earnings) and of private pension benefits (i.e., total household post-exit private pension benefits divided by pre-exit own labor earnings) in replacing the labor earnings of men who exit the labor force at various ages. A social security earnings replacement measure is often used not only to show how much social security income replaces a typical worker's lost earnings in a country but is also used to infer how much a household's income is likely to fall following a long-term labor market exit. Table 2 shows that simple social security replacement rates of this type substantially understate how much post-government household income is available following such an exit and does so disproportionately for the United States and Canada.[18]

The median German man who exits at age 62 and over has a social security replacement rate of 55.8 percent, substantially more than the 35.0 percent social security replacement rate for the median man who exits at those ages in the United States. However, once all sources of

income are included in a total income replacement rate measure (post-government household income prior to labor market exit to post-government household income following exit) the total replacement rate for the median German man is 76.9 percent and 52.2 percent for the median man in the United States.

In Canada, the difference between the social security (28.3 percent) and the total replacement rate (84.2 percent) for the median man who exits the labor force at this age is even greater. Higher median private pension replacement rates explain part of this difference across countries. While the median total replacement rate in the United States continues to be lower for men who exit at older ages than in the other countries, it is less so than the replacement rate for social security, and it is Canada rather than Germany or Great Britain that has the highest total replacement rate for the median man who exits at these older ages.

The difference between social security and full income replacement rates is even more dramatic at younger ages. Hence, the fuller measure of income belies the conventional wisdom – which is based on social security replacement rates - that the typical European worker has a dramatically smoother income transitions out of the labor market than does the typical worker in the United States or Canada.

In the United States, social security retirement benefits are only available for those aged 62 and over. Prior to age 62, social security benefits for men are primarily available only for those eligible based on disability.[19] Hence, it is not surprising that the median man exiting the labor market at middle and younger ages in the United States receives no social security benefits. The same is true for Canadian men.

But this measure grossly understates post-exit household income for men who exit at these ages. Primarily because of greater access to private pension income, the total replacement

rate for the median man in the United States who exits at middle ages is actually higher than that

of the median man who exits when he is older. The gap in replacement rates across the four

countries is smallest for those who exit at middle ages. No social security or private pension

income is received by the median man who exits from long-term work at younger ages in any of

our four countries. However, as we saw in Table 1, other public income is available. The

median man who exits at younger ages in the United States has the lowest total replacement rate

among those in the four countries.

Household Economic Well-Being Before and After Death of the Head or Spouse

We now turn to our analysis of the economic well-being of households following the

death of a head or spouse. We focus on how household income and its sources change across

four different age groups defined by the age at which the head or spouse died. We use the same

25-49 and 50-61 age groups as above but separate our oldest group into two sub-groups, 62-69

and 70 and older, to differentiate between the economic well-being of the households of those

who primarily die while transitioning into retirement from the economic well-being in

households of those who die after they are out of the labor force. We also analyze a subset of

these households - only those households in which the husband dies - so we can track the

consequences of this event on his wife.

How sources of household income change after the death of the head or spouse. The first four

columns of Table 3 show how mean household income and its sources changed from the year

before to the year after the death of a head or spouse within our four age categories and across

the four countries.[20] The sign (-, 0, +) in each cell indicates whether income from that source

increased, stayed the same, or declined after the death occurred.[21] In addition, asterisks indicate

the income categories that accounted for the largest fraction of the total of the income increases and the total of the income decreases across all income categories.[22]

By its very nature—death of a head or spouse—will cause a change in household composition and most likely in household size. In Table 3 we focus on changes in the sources of income following such a death. Therefore, the changes in income we report may be due to changes in who is in the household following the death as well as in changes in the amount of income of a particular type that they contribute, or a combination of both. Thus, our results should be interpreted as changes in income from each source after other behavioral changes have occurred, such as choice of living arrangements. One should not, for example, interpret the changes in labor earnings of "other household members" as evidence of increases or decreases in the labor supply of those household members who were in the household prior to the death since household membership may have changed.

As can be seen in Table 3, for a head or spouse who dies at ages 25-49, it is the loss of their labor earnings that has the largest negative effect on their household's income in all four countries. But the importance of offsetting increases varies across the countries. Survivor's labor earnings increase in Germany and Great Britain, remain about the same level in Canada, and fall in the United States. Income from the labor earnings of other household members increases in all countries, except Canada. But the resulting decline in post-government income caused by the death of a head or spouse is primarily offset by increases in social security benefits in the United States and Germany. Social security increases are also important in Great Britain and Canada but are less so than others' labor earnings in Great Britain and reduced tax payments in Canada.

The death of a head or spouse aged 50-61 yields similar results across the four countries. The major loss in household income is due to the loss of the deceased's labor earnings. Again, increases in social security payments offset the loss in labor earnings in all four countries but only in Great Britain is it most important. In the United States, increases in asset income are most important, while in Germany and Canada, it is a reduction in tax payments.

While household income declines after the death of a head or spouse aged 62-69, that decline is no longer primarily due to the loss of the deceased's labor income since labor force participation had already declined substantially prior to his or her death in all four countries. Declines in private pension benefits are most important in the United States, Great Britain, and Canada. In Germany declines in social security benefits are most important.

The most important sources of offsetting increases in household income also vary across the four countries among households whose head or spouse dies at ages 62-69. In the United States, Great Britain, and Germany, reduced in tax payments are most important. In Canada the most important is increased labor earnings of other household members.

For a household whose head or spouse dies at age 70 and above, the loss of the deceased's labor earnings is even less important. In all four countries, declines in social security income are most important. No single source provides the most important offsetting increase in Germany or Great Britain. In the United States and Canada, increased labor earnings of other household members are most important.

In the last four columns in Table 3, we repeat our analysis for the subsample of households in which a husband dies and leaves a widow.[23] As was the case for the sample that included deaths of either head or spouse in Table 3, the loss of the deceased's labor earnings has the most important negative effect on household income in all countries when the husband dies

at age 25-49. An increase in social security income is the most important source of offsetting income gains in the United States and Great Britain. In Germany, it is increased earnings of the widow. In Canada, it is increases in private transfers.

Among widows whose husband died between age 50-61, the lost labor earnings of their husband is most important source of reduced household income in all four countries. Only in Great Britain, however, is social security the most important source of offsetting income gains. Reduced tax payments are most important in Germany and Canada. Increased asset income is most important in the United States.

For widows whose husband died between ages 62 to 69, the loss of their husband's labor earnings continues to be most important source of reduced household income in the United States and Great Britain. In Canada lost income from private pensions is most important. In Germany reduced social security income is most important. Reduced tax payments are the most important offset to these losses in the United States, Great Britain, and Canada. Surprisingly, increases in the earnings of the widow are most important in Germany.

For widows whose husband died at age 70 and above, reduced social security income is the most important source of lost household income in all four countries. Reduced tax payments are the most important source of offsetting income increases in Germany and Great Britain. In the United States and Canada increases in the labor earnings of other household members are most important.

Table 3 shows that the pattern of loses and gains in household income across sources following the death of a head or spouse are more similar across countries than across age groups within each country. None-the-less, there are important difference in the primary source of the loss and offsetting income gains across countries. Such differences are critical from a policy

perspective only if they lead to important differences in the relative change in economic well-being of surviving household members across these countries. Before doing so, we discuss how adjustments to household income that account for differences in household size will affect measures of the change in the economic well-being of survivors following the death of a spouse in all countries.

Evaluating the economic well-being of different size households. In the appendix tables supporting Table 3, we reported the mean post-government income of households before and after the death of a head or spouse. In so doing, we reported household income for households of different sizes. A large literature exists detailing the problems associated with measuring economic well-being at the individual level. (See Moon and Smolensky, 1977 and Burkhauser, Smeeding and Merz, 1996 for examples of this literature). One of the most difficult issues in this literature is how to measure the consumption value of household income available to each individual in households of different sizes. One extreme is to assign each household member a per capita share of household income. This assignment assumes that income is equally shared by household members and that there are no returns to scale in household production. The other extreme is to assign all household income to each household member. This assignment assumes that household income is a pure public good—i.e., that access to or potential consumption of household income by one household member does not diminish in any way the amount of household income left to be consumed by other household members. An alternative interpretation would be that the household has "perfect returns to scale" in the production of household goods and services purchased with household income. (See Burkhauser and Weathers, 2001 for a detailed discussion of this issue with respect to wealth.)

The assumption one makes about the returns to scale in household production is a particularly important issue when one compares income before and after an event that, by its very nature, changes household size. If we simply compare net-of-tax total household income, unadjusted for household size, before and after the death of a head or spouse, we are effectively assuming perfect returns to scale. Alternatively, we could assume there are no returns to scale and assign each survivor a per capita share of net-of-tax household income. Buhman, Rainwater, Schmaus, and Smeeding (1988) propose a formula that accommodates these two extreme assumptions. Their formula is given by:

$$E = D/S^e \tag{1}$$

where an individual's equivalent income (E) equals total household income (D) divided by household size (S) raised to the power (e). The assumption one makes about economies of scale in household production or consumption is captured in the value one adopts for (e). At one extreme, when (e) equals 1, no economies of scale exist. Hence total household income for households of two persons must be twice that of a one-person household for each person in the two-person household to have the same level of economic well-being as the person in the one-person household. 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, and income can be thought of as a pure public good within the household. Operationally, each person is assigned equivalent income exactly equal to household income. If one compared the net-of-tax income shown in Appendix Tables 2A-9A across periods one would be implicitly making this assumption.

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 a common value used in the literature is (e) equal to 0.5 (Atkinson, Rainwater, and Smeeding, 1995; Ruggles, 1990). Because we were relating our results in Table 2 to a literature that has not controlled for household size, we implicitly used an (e) = 0. But as will be shown below, before and after comparisons of the economic well-being of households following the death of a spouse are much more sensitive to one's choice of (e) than are the comparisons we made in Table 2 following a non-death related long term labor market exit. The reason is that household size is much more likely to change in the former than in the latter. Hence, our choice of (e) is of critical importance.

In Table 4, we use the above formula to adjust post-government household income values for period t-1 and t+1 shown in the appendix Tables 2A-5A for household size, using these three values of (e). We explicitly label the resulting household size-adjusted values to indicate which (e) value we use. Higher values of (e) reduce individualized post-government household income. More importantly for our purpose, the ratio of mean household size-adjusted post-government income in t+1 to mean household size-adjusted post-government income in t-1 (after and before death) varies dramatically with the choice of (e). In Table 5, we repeat this analysis for the subsample of households in which the survivor is a widow.

As can be seen in Tables 4 and 5, the differences in the ratios across values of (e) are much greater than the differences across age groups within countries or within age groups across countries. Burkhauser, Smeeding and Merz (1996) have shown that the choice of equivalence scale 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 person 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. Tables 4 and 5 provide evidence of a corollary to this rule. The smaller the value of (e) used to estimate equivalized income, the greater is the drop in measured economic well-being of surviving members of households following the death of head of household or spouse.

Comparing replacement rates and post-government income across countries. We follow Burkhauser, Smeeding, and Merz (1999) and use an (e) value of 0.5 in our analysis of the change in household income following the death of a husband or spouse. As we discussed in the context of long term exits from the labor market (Table 2), most cross-national comparisons of how household economic well-being changes use a program based approached. That is, for example, they show how much of past labor earnings are replaced by social security benefits. In Figure 2, we provide such a comparison across our four countries for households whose head or spouse dies at various ages. Like Table 2, Figure 2 reports the social security replacement rate of the median household size adjusted income rather than the mean value to reduce the influence of outliers in the data.

In Figure 2 we first calculate, for each household the ratio of household size-adjusted social security income in t+1 to household size-adjusted social security benefits and the deceased head's or spouse's labor earnings in t-1. This ratio approximates the replacement rate concept used in the simulation typically done to measure the degree to which social security replaces lost earnings in cross-national studies that use cross-sectional data.

In all four countries, social security benefits provide substantial protection against the median household that experiences the death of a head or spouse at older ages. Germany provides the highest replacement rate in the age 70 and over group, but the differences across

countries are small. Canada provides the highest replacement rate in the age 62-69 group and the United States the lowest but once again differences for the median survivor are small.

At younger ages the replacement rates are much smaller for the median survivor in all countries, in large part because survivors do not automatically receive social security benefits. Ordinarily social security benefits are provided to households in this age group only if there is a surviving child. Canada and Germany are exceptions in the 50-61 age group. The Canadian social security program pays survivor benefits to widows and widowers this age immediately after the death of a covered worker. Benefits are based on the worker's accrued contributions to the Canadian Pension Plan. In Germany widows and widowers aged 45 and above receive 60 percent of a deceased covered worker's pension (or estimated pension).

But as we discussed above a better measure of the change in economic well-being of survivors following the death of husband or spouse is the ratio of household size-adjusted post-government income in t+1 to household size adjusted post-government income in t-1. In Figure 3, we report the ratio of median household size-adjusted post-government income in the sample for each age group. In all four countries, the median survivor experiences small changes in economic well-being when the head or spouse dies at age 70 or above. In fact, there is no change in Germany and the lowest replacement rate is found in Great Britain (0.89).

Replacement rates are even higher in the age 62-69 group for all but Great Britain which falls to 0.87. Importantly, the replacement rate at younger ages is far higher than that captured by the narrower social security replacement rate. Great Britain has the highest replacement rate at 1.03 and Canada the lowest at 0.87. Somewhat surprisingly, the United States provides the highest replacement rate (1.00) in the age 25-49 group, with Canada having the lowest replacement rate at 0.82. The median replacement rates in Figure 3 are for both surviving

widows and widowers. Because husbands are the primary labor earnings in all four countries, we now focus on the subset of the surviving population that is most likely to suffer substantial declines in economic well-being—widows.

Figure 4 reports the narrow social security replacement rates for widows. In the age 70 and over group there is very little difference across countries, with the United States highest at 0.94 and Canada lowest at 0.88. In the age 62-69 group, where past wage earnings of the husband are more important in some countries than in others, the differences in replacement rates are greater. Canada and Great Britain have replacement rates that exceed 1.0, while the United States has a replacement rate of 0.67. Once again in the two lower age groups, social security provides much less income replacement. Again, the program differences in Canada account for the much higher replacement rate for widows in the 50-61 age group.

Figure 5, however, provides a clearer picture across countries of the relative outcomes of women following the death of their husbands. In all age groups, post-government size-adjusted household income replacement rates are much closer following the death of a widow's husband. Surprisingly, given the substantial difference in the sources of income at older ages across the four countries, there is very little difference in the change in income for the median widow following the death of her husband at older ages. The replacement rates vary more across age than across countries. In all countries, except Great Britain, replacement rates are lower at younger ages than at older ages.

Conclusions

Lack of comparable multi-period data has made it difficult to determine the importance of social security and other sources of income in replacing the lost earnings of men who exit the

labor force at various ages. Here we show that, in the four countries we study, social security income (i.e., income from public, industry-wide, insurance-based, retirement and disability programs) is most important for men who exit at older ages. However, focusing solely on social security replacement rates not only overstates the actual decline in post-government household income following an exit from the labor market by men in all four countries but disproportionately does so for the United States and Canada. For instance, private pension income in the United States, Canada, and Great Britain plays a much more important role in replacing the labor earnings of men who exit at older ages than in Germany.

However, even using a post-government household replacement rate measure, the household of the average man exiting the labor force in the United States still has a relatively lower replacement rate than does the household of the average man in Canada, Great Britain, or Germany at all ages. The overall generosity of the set of retirement programs—social security, other public programs, and private pensions—that provide such income to those men who exit the labor force may in part explain the higher exit rates and lower employment rates of men in these countries relative to the United States.

We find similar results when we focus on the economic well-being of survivors following the death of a head or spouse. Post-government household income replacement of following the death of a head or spouse is in general higher than would be implied by social security replacement rates. The actual replacement rate, however, is sensitive to assumption made about household returns to scale. We find that the household size-adjusted income of the median widow of a husband who dies at older ages (aged 61-69 or 70 and above) falls modestly in all four countries when we use an (e) value of 0.5. And even for the median widow whose husband

dies at younger ages (aged 25-49, or 50-61), household size-adjusted income is not dramatically reduced.

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Appendix

In this appendix we detail the components included in each of the broad income categories described above. Appendix Table 1A lists the components of income measured in each country's survey and how we have allocated them to our broad income categories. More detailed information about the income measures contained in each survey is available in each survey's file documentation. We also provide, for each country, a brief overview of government programs for which income is measured in the data we use.

GOVERNMENT TRANSFER PROGRAMS IN CANADA

This document describes income sources in the SLID. The primary purpose of this document is to provide a thumbnail sketch of government transfer programs in Canada. Government transfers being defined to include traditional programs in which those meeting specific conditions receive money as well as programs related to private retirement income plans.[1] Government transfers are defined to include traditional programs in which those meeting specific conditions receive money as well as programs related to private retirement income plans. We generally divide transfer income into two categories: income that flows from public insurance-based benefits and income that flows from public welfare-based benefits. We categorize income from each program by whether it is a universal entitlement, whether the amount a person receives is income or wealth means tested and whether there is a quid pro quo attached to receipt of the income. By "quid pro quo" we mean that the benefits are conditioned on having paid into the system and the level of benefits are based to some degree on the level of past earnings.

Canada Child Tax Benefit

　　　　Program description

The Canada Child Tax Benefit (CCTB) is a tax-free monthly payment made to eligible families to help them with the cost of raising children under age 18. Included with the CCTB is the National Child Benefit Supplement (NCBS), a monthly benefit for low-income families with children. The NCBS is the Government of Canada's contribution to the National Child Benefit (NCB), a joint initiative of federal, provincial, and territorial governments. As part of the NCB, certain provinces and territories also provide complementary benefits and services for children in low-income families, such as child benefits, earned income supplements, child care, supplementary health benefits, and early prevention programs for children at risk.

- Universal entitlement: Yes
- Means tested: Yes
- Requires "quid pro quo": No

Old Age Security

　　　　Program description

Old Age Security provides a monthly pension to most people over 65 who have lived in Canada for at least ten years. The Old Age Security Program also provides other benefits for low-income seniors, such as the Allowance, the Allowance for the survivor and the Guaranteed Income Supplement. The basic Old Age Security pension is taxable income.

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[1] Not included are programs providing non-refundable tax credits. (Non-refundable tax credits reduce the amount of income tax you owe. However, if the total of these credits is more than the amount you owe, you will not get a refund for the difference.) The intention is to include federal and provincial programs, although the multitude of provincial programs provides a major challenge to complete coverage.

- Universal entitlement: Yes
- Means tested: Yes
- Requires "quid pro quo": No

Guaranteed Income Supplement / Spouse's Allowance / Survivor's Allowance

Program description

The Guaranteed Income Supplement provides additional money, on top of the Old Age Security pension, to low-income seniors (i.e., aged 65 or more) living in Canada. To be eligible for the Supplement, you must be receiving the Old Age Security pension and meet certain income requirements (based on the combined income of the person and spouse).
The Spouse's Allowance provides money for low-income persons (aged 60 to 64) whose spouse receives or is entitled to receive the Old Age Security pension and the Guaranteed Income Supplement.

The Survivor's Allowance provides money for low-income persons (aged 60 to 64) whose spouse has died.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Social Assistance

Program description

Social assistance covers many provincial and municipal income supplements to individuals and families. It is usually provided only after all other possible sources of support have been exhausted.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Employment Insurance

Program description

Regular benefits are paid to people who have lost their job and want to return to work. To receive these benefits you must be actively looking for another job and be willing and able to work at all times.

You can receive regular benefits if you lose your job through no fault of your own and you can't find work, provided you have paid into the EI account; you have been without work and without

pay for at least seven consecutive days; you have worked for the required number of hours based on where you live and the unemployment rate in your area.

Special benefits are paid to people who are unable to work due to illness, injury, quarantine, pregnancy or to care for a newborn or adopted child, provided you have paid into the EI account; and you have worked for the required number of hours. Fishing benefits are paid to people who have lost their job and earned money in the fishing industry (including self-employed fishers). To receive these benefits you must be actively looking for another job and be willing and able to work at all times.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Workers' Compensation

Program description

The most common benefit is the replacement of earnings lost after a workplace illness or injury, but other benefits are available. To be eligible for benefits, a person must:
Have a worker-employer relationship with an employer covered by the WSIB (Workplace Safety Insurance Board)
Have an injury or illness directly related to his/her work.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Canada / Quebec Pension Plan

Program description

The Canada Pension Plan operates in every province and territory except Quebec which has a similar program, the Quebec Pension Plan. The Canada Pension Plan can provide Canadians with a retirement pension as early as age 60. This Plan also offers disability, survivors and death benefits. The amount of the pension or benefit depends on how much and for how long a person contributes to the Canada Pension Plan. With very few exceptions, every person in Canada over the age of 18 who earns a salary must pay into it.

The Canada Pension Plan retirement pension is a monthly payment to people who have contributed to the Canada Pension Plan or both Canada Pension Plan and Quebec Pension Plan and live outside the province of Quebec and who are at least 60 years of age. The pension is designed to replace about 25% of the earnings paid into the Plan.

This retirement pension would **normally** be payable the month after a person's 65th birthday. The amount of the pension is smaller if it is taken before that point, and larger if taken after. This

"flexible" retirement pension can be adjusted to age 60 at the earliest or age 70 at the latest. To be eligible prior to age 65, a person must be considered to have reduced or stopped working. The Canada Pension Plan Disability pays a monthly benefit to people under age 65 who have contributed to the Plan and who are disabled according to Canada Pension Plan legislation. It also pays monthly benefits for their dependent children.

Canada Pension Plan survivor benefits are paid to a deceased contributor's estate, surviving spouse or common-law partner and dependent children.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Goods and Services Tax Credit

Program description

The GST/HST credit (goods and services tax/harmonized sales tax) is a tax-free payment to help individuals and families offset the cost of the GST/HST (goods and services tax; harmonized sales tax).   All persons aged 18 and over are eligible for benefits, depending on the income of the person and spouse (if any).

- Universal entitlement: Yes
- Means tested: Yes
- Requires "quid pro quo": No

Provincial Tax Credits

Program description

This is not actually a program but a category for various income amounts. Included are refundable tax credits other than those for children (which are included with child tax benefits) and the GST/HST Credit. Some are designed to help low-income individuals and families to pay property taxes, education taxes, rent and living expenses, and so on. Some non-taxable government transfers are not included here due to the reporting procedures for income tax purposes (or lack thereof). These include some training program payments, Veteran's pensions, pensions to the disabled (which are not part of CPP/QPP payments), payments from provincial automobile insurance plans, and benefits for fishing industry employees (outside of that provided in EI payments).

- Universal entitlement: Yes
- Means tested: Yes
- Requires "quid pro quo": No

Registered Retirement Savings Plans (RRSP)

Program description

This is a private retirement savings plan that a person establishes and contributes to, and that is registered with the federal government. Limits are established for the maximum amount that one can contribute each year, based on earnings and amounts contributed to any employer pension plans. Provisions exist for some carry-forward of contribution amounts from another year. Any income earned in the RRSP is generally exempt from tax until payments are received from the plan. A person may also elect to use available RRSP contribution limits to contribute to his or her spouse's RRSP. When a RRSP matures, one must either reinvest in another RRSP-eligible investment, cash in the RRSP (and pay income tax in that year on the money received) or use the money in the plan to buy:

> an annuity for life;
> an annuity spread over a number of years; or
> a registered retirement income fund (RRIF).

One cannot hold an RRSP past the end of the year in which he/she turns age 69.

- Universal entitlement: Yes
- Means tested: No
- Requires "quid pro quo": Yes

Registered Retirement Income Funds (RRIF)

Program description

Registered with the federal government, this private type of fund is a complement to the RRSP. Normally, a person accumulates savings tax-free in an RRSP, then buys a RRIF from which payments are made. RRIF payments are taxable income. Money is transferred to a RRIF from a RRSP, RPP (registered pension plan from an employer), or from another RRIF, and regular payments are made to the person holding the RRIF. A minimum amount must be paid annually from a RRIF after the year in which it is set up.

- Universal entitlement: Yes
- Means tested: No
- Requires "quid pro quo": Yes

GOVERNMENT TRANSFER PROGRAMS IN GREAT BRITAIN[2]

This document describes income sources in the BHPS. The primary purpose of the document is to provide a thumbnail sketch of government transfer programs in Great Britain. Government transfers are defined to include traditional programs in which those meeting specific conditions receive money as well as programs related to private retirement income plans. We generally divide transfer income into two categories: income that flows from public insurance-based benefits and income that flows from public welfare-based benefits. We categorize income from each program by whether it is a universal entitlement, whether the amount a person receives is income or wealth means tested and whether there is a quid pro quo attached to receipt of the income. By "quid pro quo" we mean that the benefits are conditioned on having paid into the system and the level of benefits are based to some degree on the level of past earnings.

National Insurance Retirement Pension

      Program description

This program provides state retirement benefits to those workers (or their spouses) with qualifying earnings relating to Class 1 contributions equal to at least 25 times the weekly Lower Earnings Limit in one of the two tax years on which the applicant's claim is based. Benefits are available at age 60 for women and at age 65 for men. The pension age of women will be incrementally raised to age 65 over the period 2010 to 2020.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Widow or war widows pension

      Program description

This National Insurance program extends benefits to widows of workers who have had (since April 6, 1975) qualifying earnings of at least 25 time the Lower Earnings Limit for the year in which earnings accrued or have paid 25 flat-rate contributions before April 6, 1975.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Widowed mothers allowance

      Program description

This National Insurance program extends benefits to widows of employees, directors of companies, self-employed and workers making voluntary contributions if the workers have contributed the qualifying amount from earnings for minimum contributions in their respective class or if they have paid 50 flat-rate contributions before April 6, 1975.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Invalidity pension

Program description

The purpose of this program is to replace earnings of those incapable of work. Recipients must have had previously paid national insurance contributions. In 1995 benefits from this program were renamed as "Incapacity benefits."

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Severe disablement allowance

Program description

The purpose of this program is to replace earnings of those incapable of work and who have not previously paid national insurance contributions.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Industrial injury allowance

Program description

The purpose of this program is to compensate people who were injured or became sick in the course of employment.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Attendance allowance

Program description

This program is designed to meet the extra costs of caring for disabled persons over the age of 65 who have special needs. This program extends the *care* component of the Disability Living Allowance program to persons age 65 or older.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Mobility allowance

Program description

This benefit is the mobility component of the Disability Living Allowance. That program is designed to meet the extra costs of disabled people with special needs for *care* or *mobility*. Can be claimed only up to age 65.
- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Invalid care allowance

Program description

The purpose of this program is to replace earnings for those who do not work because they are caring for a disabled person receiving the Disability Living Allowance or the Attendance Allowance.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

War disability pension

Program description

The purpose of this program is to compensate people who were injured or became sick while serving in the armed forces.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Disability working allowance

Program description

This program is designed to supplement low pay of those working at least 16 hours per week. The benefit is restricted to workers whose employment prospects are affected by disability.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Disability living allowance

Program description

This program is designed to meet the extra costs of disabled people with special needs for *care* or *mobility*. Can be claimed only up to age 65.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Unemployment benefit

Program description (Social Security Administration, 1999)

This program is designed to provide support to workers who involuntarily lose their jobs. Benefits are available to workers age 18 and older and to workers 16-17 years old under specific conditions. Contributions are paid on earnings of at least 25 times the weekly lower earnings level in one of the last two complete tax years. Workers receive a flat-rate weekly benefit that varies by age; those under age 18 get £30.95, those aged 18-24 get £40.70, and those age 25 and older get £51.40 for up to six months. A separate component (Jobseeker's Allowance) is available to those workers who have not qualified for the contribution-based benefits. These benefits are available to workers who pass an income test.

- Universal entitlement: No
- Means tested: No/yes
- Requires "quid pro quo": Yes

Income support

Program description

The purpose of this program is to maintain a minimum level of income for non working claimants and their dependents. Benefits above the basic rates are available to disabled persons ("disability premium"). Before 1988 this benefit was called the "Supplementary benefit."

- Universal entitlement: Yes
- Means tested: Yes
- Requires "quid pro quo": No

National Insurance sickness benefit

Program description (Social Security Administration, 1999)

This program provides support to workers who are incapacitated due to illness. The short-term benefit is paid from contributions on earnings of at least 25 times the weekly lower earnings level in any one tax year, plus contributions paid or credited on earnings of at least 50 times the weekly lower earnings level in each of the two complete tax years before the start of the benefit year in which the claim is made. Benefits are paid to employees, self-employed, unemployed aged under 65 (men) or 60 (women) who are not receiving Statutory Sick Pay from their employer.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": Yes
-

Child benefit

Program description

This program pays benefits to families with children under 16 years of age (19 if the child is a full-time student). The child must have lived in the United Kingdom for 26 of the previous 52 weeks.

- Universal entitlement: Yes
- Means tested: No
- Requires "quid pro quo": No

Lone parent benefit

Program description

This program is a subcomponent of the Income Support program available to lone parents. Extra payments are made to parents ages 18 to 60 and whose youngest child is less than 16 years of age. Additional payments are made to encourage and assist lone parents to work. To get these benefits the lone parent must meet with a social service worker (Personal Adviser).

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Housing benefit and council tax benefit

Program description

This program subsidizes the payment of rent and council tax liabilities of claimants and dependents. Higher subsidies are available to disabled persons (a disability premium).

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Government Transfer Programs in Germany

This document describes income sources in the GSOEP. The primary purpose of the document is to provide a thumbnail sketch of government transfer programs in Germany. Government transfers are defined to include traditional programs in which those meeting specific conditions receive money as well as programs related to private retirement income plans. We generally divide transfer income into two categories: income that flows from public insurance-based benefits and income that flows from public welfare-based benefits. We categorize income from each program by whether it is a universal entitlement, whether the amount a person receives is income or wealth means tested and whether there is a quid pro quo attached to receipt of the income. By "quid pro quo" we mean that the benefits are conditioned on having paid into the system and the level of benefits are based to some degree on the level of past earnings.

Insurance based public pension programs:

Old age pensions, including invalidity pension from the GRV
Miner Pension, old age and disability
Farmer Pension, old age and disability
War victim pension
Pensions for widows, widowers, and orphans (GRV, and related systems)

Program description

The Categories listed are various old-age and disability pensions from the GRV (Gesetzliche Rentenversicherung) and related systems. The old age and disability insurance (GRV, Gesetzliche Rentenversicherung) provides old age pensions and disability pensions to workers and their survivor and dependent children if the worker dies. Both are paid monthly. Blue and white collar workers (including all employees in the public sector except ("Beamte") civil servants) are compulsory insured, while civil servants and the self-employed (with few exceptions) are not insured. There are very similar programs for miners and farmers.

The GRV strongly relates old age benefits to previous contributions (earnings). However, the system offers some credits for periods of qualification, unemployment, sickness and raising children. The ideal replacement ratio is about 70 percent of former net earnings for all employees.

A standard old age pension is paid to person's age 65 and older. Persons having a qualifying period of 35 years can claim for a long-service pension after their 63rd birthday. Under special circumstances women age 62 and older can receive the old-age pension for women. Pensions from the GRV-Systems are only partly taxed. The average pensioner does not pay taxes.

Widows and Widowers receive 60 percent of their deceased partner's pension if they are at least 45 years old, or are invalid, or are raising a child. Otherwise the pension is reduced to 25 percent.

Orphans can receive a pension until the age of 27. The amount is between 10 and 20 percent of their deceased parent's pension.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Civil servant pension (for Beamte class public sector employers only)

Program description

Civil servants (in Germany called Beamte) should always be carefully distinguished from other employees in the public sector. Civil servants are not members of the GRV. They do not pay specific contributions but do receive a state pension at retirement. The pension is about 75 percent of the last received net income. Civil servant pensions are fully taxed.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Worker accident pension

Program description

Statutory occupational accident insurance protects workers and their families against lost earnings capacity due to an accident at work. The insurance covers nearly all blue and white collar workers. Contributions are paid by the employers. The pension amount depends on the reduction in earnings capacity and on earnings received during the last year before the accident.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Additional pensions for employees:

Supplementary pension for employees in the public sector

Program description

Blue and white collar workers in the public sector must participate in a statutory supplementary pension program. Contributions to this system are paid fully by the employer (state, country, city). The program does not cover civil servants (Beamte). The program is similar to a Private Sector employer pension.

- Universal entitlement: No

- Means tested: No
- Requires "quid pro quo": Yes

Private sector employer pension for other workers

Program description

Employer pension programs in Germany are private and voluntary. Whether a worker is covered by such a program depends heavily on firm size, industrial sector and other firm related characteristics.

- Universal entitlement: Yes/No
- Means tested: No
- Requires "quid pro quo": Yes

Unemployment insurance system:

The unemployment insurance system (Federal employment services) offers various benefits that can generally be described as follows:

Unemployment insurance benefit

Program description

The compulsory federal unemployment insurance provides benefits to regularly employed workers who become involuntarily unemployed and who are able and willing to accept suitable employment. To qualify, contributions to the federal unemployment insurance must be paid at least for twelve month. The unemployment insurance benefit is about 60 percent (67 percent if there are children in the household) of most recent after tax earnings. The period of entitlement is between 6 and 32 months and depends on a worker's age and length of past contributions to the system.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Unemployment assistance

Program description

Unemployment assistance begins after entitlement for unemployment insurance benefits is exhausted. A person applying for unemployment assistance must be involuntarily unemployed but willing and able to accept suitable employment. The benefit is 53 percent (57 percent if there are children) of last after tax earnings. However, now benefits are means tested. There is no restriction on the period of entitlement.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": Yes

Support for further training and education, transition pay

Program description

Under special circumstances unemployed workers may claim some benefits if they are engaged in further training or education.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": Yes

Other public income transfer programs:

Social assistance (subsistence allowance)

Program description

Near universal social assistance is available to a persons in need, in danger of becoming destitute, or unable to overcome their difficulties on their own or with the help of other people. Social assistance comes in various forms – personal assistance, cash benefit payments and payments in kind – and is provided as either assistance towards living expenses or assistance for special circumstances such as disability, illness or old age. Social assistance is a means tested program and additional earnings will be deducted at a rate of almost 100 percent. At present, the monthly standard benefit for the head of the household in the western states of Germany averages about DM 550. The standard payment for a spouse is 80 percent of this amount. Children receive between 50 and 90 percent, depending upon their age.

- Universal entitlement: Yes
- Means tested: Yes
- Requires "quid pro quo": No

Maternity benefit

Program description

The period of statutory maternity leave begins six weeks before the child is due and ends eight weeks after childbirth. The maternity benefit, paid by statutory health insurance, is 100 percent of a female worker's after tax earnings payable during the statutory maternity leave. Either a father or a mother can claim the maternity benefit.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Child care benefit (benefits for raising children)

Program description

Fathers or mothers can claim the child care benefit. The benefit is paid up to the second birthday of the child. Benefits are means tested with an upper limit of about DM 600 per month.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Child benefits

Program description

Child benefits can be claimed for children under 18 years of age (under 27 if child is in educational training). The benefit is DM 270 each for the first and the second child, DM 300 for the third child and DM 350 for the fourth and each additional child. Additionally, when assessing income tax, the tax office checks that the amount of child benefit paid satisfies the constitutional rule on tax relief. If not, the tax bill is reduced by the tax-free allowance for children less the child benefit already received. The last option is only used by persons with high income.

- Universal entitlement: Yes/No
- Means tested: No
- Requires "quid pro quo": No

Housing benefit

Program description

Housing benefit is an allowance that the state grants to help cover the cost of housing. Tenants as well as homeowners can receive a housing benefit if their rent or mortgage payments exceed their financial means. Housing benefits are means tested, depending on income and some family characteristics.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Student benefit

Program description

Students may apply for a student benefit (BAFoeG). Student benefits are partially means and depends on parental income. The maximum benefit is about DM 1,100 per month.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Sickness benefits

Program description

In case of sickness employers have to pay 100 percent of a worker's wage income for the first six weeks of sickness. After six weeks, sickness benefits are paid by the statutory sickness insurance fund at about 80 percent of the worker's most recent after tax earnings.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Long-term care insurance benefits

Program description

The statutory compulsory long-term insurance provides cash benefits and/or in-kind benefits. Persons are eligible if they require frequent or substantial help with normal day-to-day activities on a long-term basis. Benefits are granted on the basis of the person's care level and whether the person needs care at home or institutional care. Home care cash benefits are paid up to a maximum of DM 1,300 per month.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Private transfer sources:

Transfer payments from relatives not living in the household, including court imposed child support.

GOVERNMENT TRANSFER PROGRAMS IN THE UNITED STATES

This document describes government transfer programs in the United States, with government transfers being defined to include traditional programs in which recipients must satisfy specific conditions to receive money and programs related to private retirement income plans. We generally divide transfer income into two categories: income that flows from public insurance-based benefits and income that flows from public welfare-based benefits. We categorize income from each program by whether it is a universal entitlement, whether the amount a person receives is income or wealth means tested and whether there is a quid pro quo attached to receipt of the income. By "quid pro quo" we mean that the benefits are conditioned on having paid into the system and the level of benefits are based to some degree on the level of past earnings.

Old-Age Insurance

Program description

The Old-Age Insurance (OAI) program provides a monthly pension benefit based on past earnings to workers and their spouses age 62 and older. To be eligible for benefits the worker must have contributed into the system for a fixed number of years.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Disability Insurance

Program description

The Disability Insurance (DI) program provides a monthly pension benefit based on past earnings to those who are determined to be unable to perform any gainful activity. At age 65 all beneficiaries are automatically shifted to the Old-Age Insurance program. To be eligible for benefits a worker must have recently contributed into the system for a fixed number of years.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Survivors Insurance

Program description

The Survivors Insurance (SI) program provides a monthly benefit to the survivors (spouse and dependent children) of a deceased worker who was covered by the Old-Age and Disability Insurance programs. Benefits are based on the past earnings of the worker.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Unemployment Insurance (UI)

Program description

Unemployment insurance provides benefits to regularly employed workers who become involuntarily unemployed and who are able and willing to accept suitable employment. The precise rules governing UI varies by state. In most states benefits are designed to replace about 50 percent of usual weekly wages subject to a maximum. Benefits typically last a statutory maximum of 26 weeks.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Workers Compensation (WC)

Program description

Workers compensation provides benefits to regularly employed workers who become involuntarily unemployed through work-related accidents. The precise rules governing WC vary by state. In most states benefits are designed to replace a fraction of usual weekly wages subject to a maximum. The fraction and maximum vary by state. Depending on the type and nature of the injury, a worker can be classified as having a permanent or temporary disability and that disability can be classified as either full or partial. The duration and amount of benefits vary with the classification of the disability.

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Veterans Benefits

Program description

Veterans Benefits includes two programs that provide cash benefits. The first program provides benefits to veterans with service-connected disabilities. This program is similar in design to WC. A second program provides benefits to needy veterans who have non service connected disabilities. This program is similar in design to SSI.

Compensation for service connected disabilities

- Universal entitlement: No
- Means tested: No
- Requires "quid pro quo": Yes

Pensions for non service connected disabilities

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": Yes

Aid to Families with Dependent Children (AFDC)/Temporary Assistance to Needy Families

(TANF)

Program description

TANF replace AFDC effective in July 1997. TANF provides assistance and work opportunities to low-income families with children. Families can spend more than five cumulative years on TANF. States have broad flexibility to determine eligibility, methods of assistance and benefit levels. In all state, nearly all recipients must work after having received two years of assistance.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Supplemental Security Income (SSI)

Program description

Supplemental Security Income provides income support to persons 65 and older, blind or disabled adults, or blind or disabled children. Eligibility requirements and payment standards are nationally uniform. The disability requirement for SSI is the same as for DI. Benefit levels are based on an income test and an asset test.

- Universal entitlement: No
- Means tested: Yes
- Requires "quid pro quo": No

Food Stamps

Program description

The Food Stamp program provides electronic benefit transfer payments that are accepted at most retail food stores. To qualify for benefits households must meet income and asset tests.

- Universal entitlement: Yes
- Means tested: Yes
- Requires "quid pro quo": No

Work and Training Programs

Program description

The Federal government has at times created specific jobs targeted to members of low-income households. An example of these types of programs would be the Comprehensive Employment and Training Act of 1973 (CETA). This program ended in the early 1980s. Since the early 1980s, work-related programs have almost completely shifted to short-run training activities. An examples of this would be the Job Training Partnership Act of 1982. In general, to remain eligible for income transfers from programs like TANF and Food Stamps recipients are expected to enter job training programs.

- Universal entitlement: Yes
- Means tested: Yes
- Requires "quid pro quo": No

Women with Infant Children (WIC)

Program description

WIC is a special supplemental food program that provides food assistance to low-income pregnant and post-partum women and their infants as well as to low-income children up to the age of five. Benefits are income and asset tested.

- Universal entitlement: Yes
- Means tested: Yes
- Requires "quid pro quo": No

Public Assistance

Program description

General Assistance is provided by state and local jurisdictions. Eligibility requirements and payments vary from state to state and often within a state. Payment levels are usually lower than those provided by federally financed programs and are often of limited duration. Recipients generally include unemployed persons not currently eligible for UI and persons whose disabilities are not sufficiently severe to qualify for SSI.

- Universal entitlement: No

- Means tested: Yes
- Requires "quid pro quo": No

Low-Income Home Energy Assistance Program

Program description

Provides benefits to eligible households to meet the cost of home energy. Benefits are income and asset tested.

- Universal entitlement: Yes
- Means tested: Yes
- Requires "quid pro quo": No

Retirement, pension and annuity income

Description

Employer pensions are generally either defined contribution plans or defined benefit plans. Defined contribution plans are generally financed by explicit contributions from both the employer and employee. These funds are then invested. Benefits depend on the outcome of these investments. Defined benefit plans provide a specific benefit based on past earnings.

Veterans Pension

Description

Veterans pension provide defined benefit pension income for military service. To be eligible a veteran must has served a fixed number of years.

Individual Retirement Accounts (IRA)/401K plans

Description

These plans provide tax-sheltered mechanisms for retirement income generated through private savings.

Child support

Description

This category includes income from court imposed and voluntary payments from the non-resident parent to the parent who provides care to the child.

Help from relatives

Description

This category includes income from non-resident relatives.

Other transfer income

Description

This category includes income from any other non-resident sources.

Endnotes

1. In this paper we use the term social security programs to refer to public, industry-wide, insurance-based retirement, disability, and survivors programs where benefits are based on the worker's earnings record. In some countries, social security programs could also include unemployment insurance, child benefits, etc. See the Appendix for a description of the programs we include in our analysis.

2. Some studies employ a synthetic cohort approach using repeated cross-sections to show how income changes across age groups. Such methods may confound composition and age effects. See Schwaraze and Frick (2000) for an example of a study that does use multiperiod data to estimate lifetime replacement rates in a cross national context.

3. Because the Canadian panel is much shorter, we only require two consecutive years of work followed by two years of non-employment.

4. Although data for Canada are only publicly available for 1993-1994, SLID data from 1995-1999 can be analyzed by special arrangement with Statistics Canada. To inquire about access to any of the data in this paper contact Dean Lillard at DRL3@cornell.edu.

5. Though data on the residents of the eastern states of Germany are available starting in 1990, we restrict our German sample to men with five years of continuous residence in the western states of Germany.

6. Very few men experienced more than one labor market exit over the period of our data.

7. In the United States, the year of death is identified using the restricted access PSID Death File which is not part of CNEF but is available through direct arrangements with PSID staff.

8. The sources of income in each of these categories are described in more detail in Appendix Table 1A.

9. Because we are interested in both labor market exit and changes in economic well-being by age we use a yearly frame for both definitions. Age is reported at the time of the interview but we are measuring employment and household income in the previous year. Because our data are based on the year and not actually on the day of exit we will not precisely capture income flows before and after the day of labor market exit. This is why we focus on the years prior to and after exit and do not include the actual year of exit in our tables.

10. All observations in our sample are weighted. Longitudinal weights of the last year of work (t) are assigned. These weights make the sample representative of the population born in the range of years consistent with each age group and sample period. For example, in the PSID our sample period is from 1990 to 1996. Our sample weights in the PSID makes the 25-49 year-old sample representative of men born between 1941 and 1971 who exited the labor force sometime between 1990 and 1996. The sample weights in the other data sets and age groups yield samples that represent populations similarly defined.

11. GSOEP, PSID and SLID data are collected on labor earnings and labor force participation in the preceding calendar year. BHPS data on labor earnings and labor force participation are for September 1 of the previous year to September 1 of the current (survey) year. To be in our sample a worker must have experienced his last year of work no earlier than 1990. In tables showing income for up to three years prior to exit, we use PSID and GSOEP data from income years 1987-1989 for those who last worked in 1990. Note also that we use unbalanced panels in these tables.

12. We focus on men aged 55 to 67 in Figure 1 because these are the ages at which the hazard of a long-term labor market exit rises substantially in all four countries. In tables available from the authors we show that at earlier ages exit rates are modest (less than 5 percent in each country) and there is little difference in these rates across the four countries. We do not present or plot values if we observe fewer than 35 men at that age in our data.

13. The conceptualization of a worker's pension and social security rights as an asset whose value varies over his or her life cycle is an important innovation in the retirement literature. See Quinn, Burkhauser, and Myers (1990) for an early use and review of this conceptualization and its importance in modeling retirement decisions and Quinn and Burkhauser (1998) and Lumsdaine and Mitchell (1999) for more recent reviews.

14. See Borsch-Supan and Schnable (1999) for Germany, Diamond and Gruber (1999) for the United States, Blundell and Johnson (1999) for Great Britain, and Gruber (1999) for Canada for a discussion of the behavioral impact of social security programs on retirement in these countries.

15. Income is non-zero in t+1 and t+2 because men who work no more than 52 hours per year are considered to have effectively left the labor force even if they have positive labor earnings. However, in Great Britain, the differences in the time unit for yearly income may also play a role at younger ages.

16. As we will discuss in greater detail below, one must be cautious in making comparisons of economic well-being across households of different sizes or across time for individuals who live in households that can change size. The reason is that the economic well-being of individual members of a household depends on household income, the number of people in the household who have a claim to it, and the ability of the household to achieve a given level of well-being from that income.

17. In Tables 1 and 2 we use preliminary data from the PSID that was subsequently updated by the PSID staff. The preliminary data we use may partly explain the relatively low social security income values we report in Tables 1 and 2. We will revise these tables in future research on this topic. We use the updated data in all subsequent tables and figures reported in this paper.

18. In Table 2, we focus on the median worker because this value is less sensitive to outliers. We do not adjust for changes in household size over the period of our analysis both because

the narrow social security replacement rate literature usually ignores how changes in household size impact on a household's economic well-being and because for the event we are focusing on Table 2—a long term non-death related exit of a long term worker—household size is not likely to vary much over the period of analysis. As discussed below, this is not the case for exits caused by death. In this case, the choice of household size adjustment mechanism will importantly effect the measured replacement rates.

19. The United States eligibility criteria for disability benefits is among the strictest in industrial countries – inability to perform any substantial gainful activity – and social security beneficiaries per 1000 workers are lower in the United States than in Great Britain or Germany. See Aarts, Burkhauser and de Jong (1998) for a fuller discussion.

20. Appendix Tables 2A, 3A, 4A, and 5A provide detailed information on mean post-government household income (i.e. total gross household income minus all taxes) as well as on key sources of that income for each of the three year before and after the death of a household head or spouse for the United States (Table 2A), Germany (Table 3A), Great Britain (Table 4A), and Canada (Table 5A). As was the case with Table 1, we use mean values unadjusted for household size to focus on the changes in the relative importance of various sources of income following the event of the death of head or spouse.

21. To decide whether to assign a (-, 0, +) to each income source, we first separately sum increases and decreases in mean household income across all sources after death. Each increase (decrease) in mean household income is calculated as a fraction of the total increase (decrease). For increases (decreases) greater than 10 percent a "+" ("-") was assigned. A "0" was entered in all other cells.

20. A decrease in tax obligations is treated as an increase in income.

23. Appendix Tables 6A, 7A, 8A. and 9A provide detailed information on mean post government household income (i.e. total gross household income minus all taxes) as well as on key sources of that income for each of the three years before and after death of a household head or spouse for the United States (Table 6A), Germany (Table 7A), Great Britain (Table 8A), and Canada (Table 9A).

Table 1. Mean Household Income of Men Before and After Exit, by Source, Country, and Age at Exit

	United States (Dollars)		Germany (Marks)		Britain (Pounds)		Canada (Dollars)	
	Before	After	Before	After	Before	After	Before	After
Income Source				Aged 25 through 49				
Own market work	23172	516	36255	1468	14384	2704	22781	1495
Private pensions	1958	2186	142	567	173	854	492	1251
Other private	21760	17741	19358	22202	7831	14084	13095	18100
Social security	2507	1287	939	2723	330	816	344	778
Other public	1086	1601	2104	11318	1868	5603	816	5143
Post-government	46481	22463	43179	32037	19174	16647	35901	28721
				Aged 50 through 61				
Own market work	47830	1118	64213	4110	17125	236	40212	3372
Private pensions	2948	13515	58	3526	1136	5705	1481	13898
Other private	36808	28623	33782	29685	12182	17203	24338	31690
Social security	1046	3347	1271	18061	1130	1639	203	681
Other public	710	610	922	8248	1456	4165	1189	5224
Post-government	78455	46613	71311	55813	27185	20930	55093	40860
				Aged 62 and over				
Own market work	30339	514	57319	172	13604	130	27656	1941
Private pensions	4856	9304	55	3192	3515	3855	2199	8281
Other private	24670	15008	29655	19266	12419	14863	11943	15392
Social security	4105	9863	6464	31302	2401	5452	804	6568
Other public	189	271	264	1201	2352	6100	397	1034
Post-government	58756	34571	71030	52073	25630	18087	40710	33664

Source: PSID income years 1988-1996, GSOEP income years 1988-1997, BHPS income years 1990-1997, SLID income years 1993-1998. Sample sizes for men aged 25-49, 50-61 and 62 and over respectively are: PSID (209, 85, 86), GSOEP (94, 241, 72), BHPS (49, 78, 48), and SLID (134, 179, 83).

Notes: Household income is averaged over years t-2 and t-1 (before) and over years t+1 and t+2 (after), where (t) is the last year of long-term employment. Income values are in constant 1996 United States dollars, 1995 German marks, 1996 British pounds, and 1997 Canadian dollars. No adjustments are made for household size.

Table 2. Median Private Pension, Social Security and Total Income Replacement Rates of Men, by Country and Age of Exit (Percentages)

Country	Age 25 through 49			Age 50 through 61			Age 62 and over		
	Social Security	Private Pensions	Total Income	Social Security	Private Pensions	Total Income	Social Security	Private Pensions	Total Income
United States	0.0	0.0	46.0	0.0	28.7	62.0	35.0	25.3	52.2
Germany	0.0	0.0	58.2	28.7	0.0	76.8	55.8	0.0	76.9
Great Britain	0.0	0.0	86.0	5.7	25.3	74.9	57.0	14.6	75.0
Canada	0.0	0.0	75.9	0.0	20.5	71.3	28.3	19.6	84.2

Source: PSID Income years 1988-1996 GSOEP Income years 1988-1997 BHPS Income years 1990-1997 SLID Income years 1993-1998

Notes: The social security earnings replacement rate is the ratio of household social security income to own labor income. The private pension earnings replacement rate is the ratio of household private pension income to own labor earnings. The total income replacement rate is the ratio of post-government household income after and before labor force exit. In all cases, income before labor force exit is averaged over years t-1 and t-2. Income after labor force exit is averaged over years t+1 and t+2. The median value of each is reported in the cells of this table. The actual median person is different in each cell. No adjustments are made for household size.

Table 3. Direction of Change in Mean Household Income by Source After the Death by Family Member Type, Country and Age.

Aged 25 through 49

Income Source	Death of Head or Spouse				Death of Husband			
	United States	Germany	Great Britain	Canada	United States	Germany	Great Britain	Canada
Private Sources								
Total Household Labor Income	-	-	-	-	-	-	-	-
Survivor's Labor Income	-	+	+	0	-	+*	+	0
Deceased's Labor Income	-*	-*	-*	-*	-*	-*	-*	-*
Others' Labor Income	+	+	+*	-	+	+	+	+
Private Transfers	0	0	0	+	0	0	0	+*
Private Pensions	0	+	+	+	+	+	+	+
Assets	+	0	0	0	+	+	0	0
Public Source								
Transfers	0	-	-	+	0	-	-	+
Social Security	+*	+*	+	+	+*	+	+*	+
Taxes	+	+	0	+*	0	+	+	+
Post-Government	-	-	-	-	-	-	-	-

Aged 50 through 61

Income Source	Death of Head or Spouse				Death of Husband			
	United States	Germany	Great Britain	Canada	United States	Germany	Great Britain	Canada
Private Sources								
Total Household Labor Income	-	-	-	-	-	-	-	-
Survivor's Labor Income	0	-	0	-	0	-	0	-
Deceased's Labor Income	-*	-*	-*	-*	-*	-*	-*	-*
Others' Labor Income	+	-	+	-	+	-	+	+*
Private Transfers	+	+	0	0	0	+	0	-
Private Pensions	+	+	+	-	0	+	0	-
Assets	+*	0	0	-	+*	0	+	+
Public Assets								
Transfers	0	0	-	-	0	0	-	0
Social Security	+	+	+*	+	+	+	+*	0
Taxes	+	+*	+	+*	+	+*	+	+*
Post-Government	-	-	-	-	-	-	-	-

Table 3 Continued. Direction of Change in Mean Household Income by Source After the Death by Family Member Type, Country and Age.

Aged 62 through 69

Income Source	Head or Spouse				Husband			
	United States	Germany	Great Britain	Canada	United States	Germany	Great Britain	Canada
Private Sources								
Total Household Labor Income	-	-	-	+	-	-	-	0
Survivor's Labor Income	-	+	-	0	-	+*	-	0
Deceased's Labor Income	-	-	-	-	-*	0	-*	0
Others' Labor Income	0	0	0	+*	+	+	-	+
Private Transfers	0	0	0	0	0	0	0	0
Private Pensions	-*	0	-*	-*	-	0	-	-*
Assets	-	+	-	0	0	+	0	-
Public Sources								
Transfers	0	0	-	0		0	-	0
Social Security	-	-*	0	-	-	-*	+	-
Taxes	+*	+*	+*	+	+	+	+*	+*
Post-Government	-	-	-	-	-	-	-	-

Aged 70 and over

Income Source	Head or Spouse				Husband			
Private Sources								
Total Household Labor Income	+	0	-	+	0	-	-	+
Survivor's Labor Income	-	+	0	+	0	+	0	0
Deceased's Labor Income	-	-	-	0	-	-	-	0
Others' Labor Income	+*	0	0	+*	+*	0	0	+*
Private Transfers	0	0	0	0	-	0	0	0
Private Pensions	-	-	-	-	-	-	-	-
Assets	-	+	-	-	-	+	-	0
Public Sources								
Transfers	0	0	0	0	0	0	-	+
Social Security	-*	-*	-*	-*	-*	-*	-*	-*
Taxes	+	0	-	0	+	+*	+*	0
Post-Government	-	-	-	-	-	-	-	-

Source: Based on year information contained in Appendix Tables 2A-9A.

Notes: Sign is negative if change in sources accounted for at least a 10 percent decline in post-government income. Sign is positive if change in source accounted for at least 10 percent increase in post-government income. Sign is zero if change is less than 10 percent. This is an unbalanced panel. Sample size varies across years. See Appendix Tables 10A and 11A. A detailed list of the income types included in each category is in the appendix. No adjustments are made for household size.

Table 4. Survivors' Mean Post-Government Household Size-Adjusted Income in the US, Canada, Great Britain, and Germany Before and After Death of a Household Head or Spouse by Various Returns-to-Scale Values.

Post-Government Income	Aged 25 through 49			Aged 50 through 61			Aged 62 through 69			Aged 70 and over		
	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	40365	24564	.61	38872	26717	.69	26502	16966	.64	22569	17434	.77
e=.5	21536	15617	.73	26689	25584	.96	17617	16277	.92	15301	16395	1.07
e=1	11870	10733	.90	16535	21711	1.31	11956	15747	1.32	10477	15766	1.50
Canada[b]												
e=0	50733	32494	.64	57615	36754	.64	35316	28505	.81	32414	25323	.78
e=.5	25892	20664	.80	32142	25236	.79	22084	22062	1.00	21125	21139	1.00
e=1	13565	14019	1.03	18359	18545	1.01	14228	18447	1.30	14140	19066	1.35
Great Britain[c]												
e=0	20882	20504	.98	20787	18061	.87	19587	12494	.64	16370	11258	.69
e=.5	10983	12468	1.14	11894	12180	1.02	12696	10347	.81	10821	9541	.88
e=1	5875	7889	1.34	7064	8826	1.25	8341	8998	1.08	7273	8474	1.17
Germany[d]												
e=0	56225	44819	.80	57163	43902	.77	46426	35708	.77	40631	31646	.78
e=.5	30649	29639	.97	34871	33592	.96	31118	32651	1.05	27604	29704	1.08
e=1	17160	20861	1.22	21711	27020	1.24	21073	30614	1.45	18916	28482	1.51

Source: authors' calculations from the Panel Study of Income Dynamics 1976-1997, Survey of Labour and Income Dynamics 1993-1999, British Household Panel Study 1991-1999, and German Socio-Economic Panel 1984-2000

Notes: This is an unbalanced panel. Sample size varies across years and are shown in Appendix Table 10A.

[a]Constant 1996 US dollars.
[b]Constant 1996 Canadian dollars.
[c] Constant 1996 British pounds.
[d]Constant 1996 German marks.

Table 5. Widows' Mean Post-Government Household Size-Adjusted Income in the US, Canada, Great Britain, and Germany Before and After Death of Their Husband by Various Returns-to-Scale Values

Post-Government Income	Aged 25 through 49			Aged 50 through 61			Aged 62 through 69			Aged 70 and over		
	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	42021	12711	.30	41570	21744	.52	29176	14998	.51	25973	14111	.54
e=.5	22565	11664	.52	24823	17923	.72	19372	14523	.75	17578	14798	.84
e=1	12499	7865	.63	15192	14908	.98	13164	13596	1.03	12034	14271	1.19
Canada[b]												
e=0	50648	35228	.70	48768	31198	.64	32796	24258	.74	30245	22240	.74
e=.5	27344	23498	.86	29313	22930	.78	21727	20674	.95	20760	19990	.96
e=1	15285	16758	1.10	18028	18298	1.01	14647	18674	1.27	14378	18787	1.31
Great Britain[c]												
e=0	19776	17699	.89	20435	16668	.82	18397	10403	.57	15605	9684	.62
e=.5	11073	11844	1.07	12436	12448	1.00	12189	9122	.75	10714	8726	.81
e=1	6362	8362	1.31	7824	10049	1.28	8170	8268	1.01	7428	8128	1.09
Germany[d]												
e=0	54847	41813	.76	57811	41587	.72	49395	36240	.73	41767	31382	.75
e=.5	30053	26924	.90	35361	32612	.92	32959	32782	.99	28383	29484	1.04
e=1	16921	18743	1.11	21985	26593	1.21	22221	30472	1.37	19457	28280	1.45

Source: authors' calculations from the Panel Study of Income Dynamics 1976-1997, Survey of Labour and Income Dynamics 1993-1999, British Household Panel Study 1991-1999, and German Socio-Economic Panel 1984-2000
Notes: This is an unbalanced panel. Sample size varies across years and are shown in Appendix Table 11A.
[a]Constant 1996 US dollars.
[b]Constant 1996 Canadian dollars.
[c] Constant 1996 British pounds.
[d]Constant 1996 German marks.

Figure 1. Age-Specific Labor Force Exit Rates of Men in the 1990s, by Country
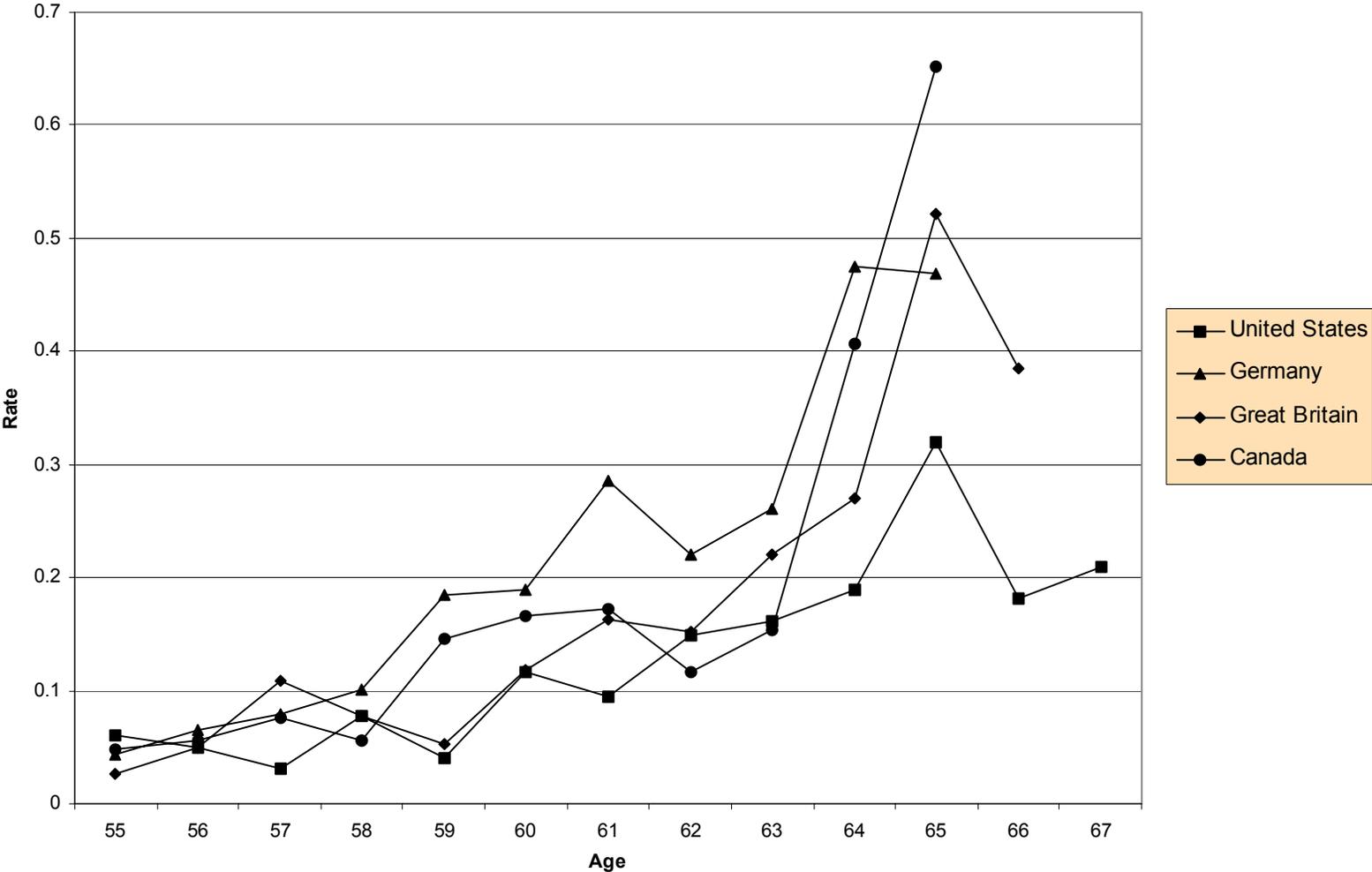
Source: Author's calculations

Figure 2. Median Survivors' Social Security Replacement Rate in the US, Canada, Great Britain, and Germany by Age at Death of Head or Spouse (e=0.5)

Source: authors' calculations from PSID, SLID, BHPS, and GSOEP data from various years
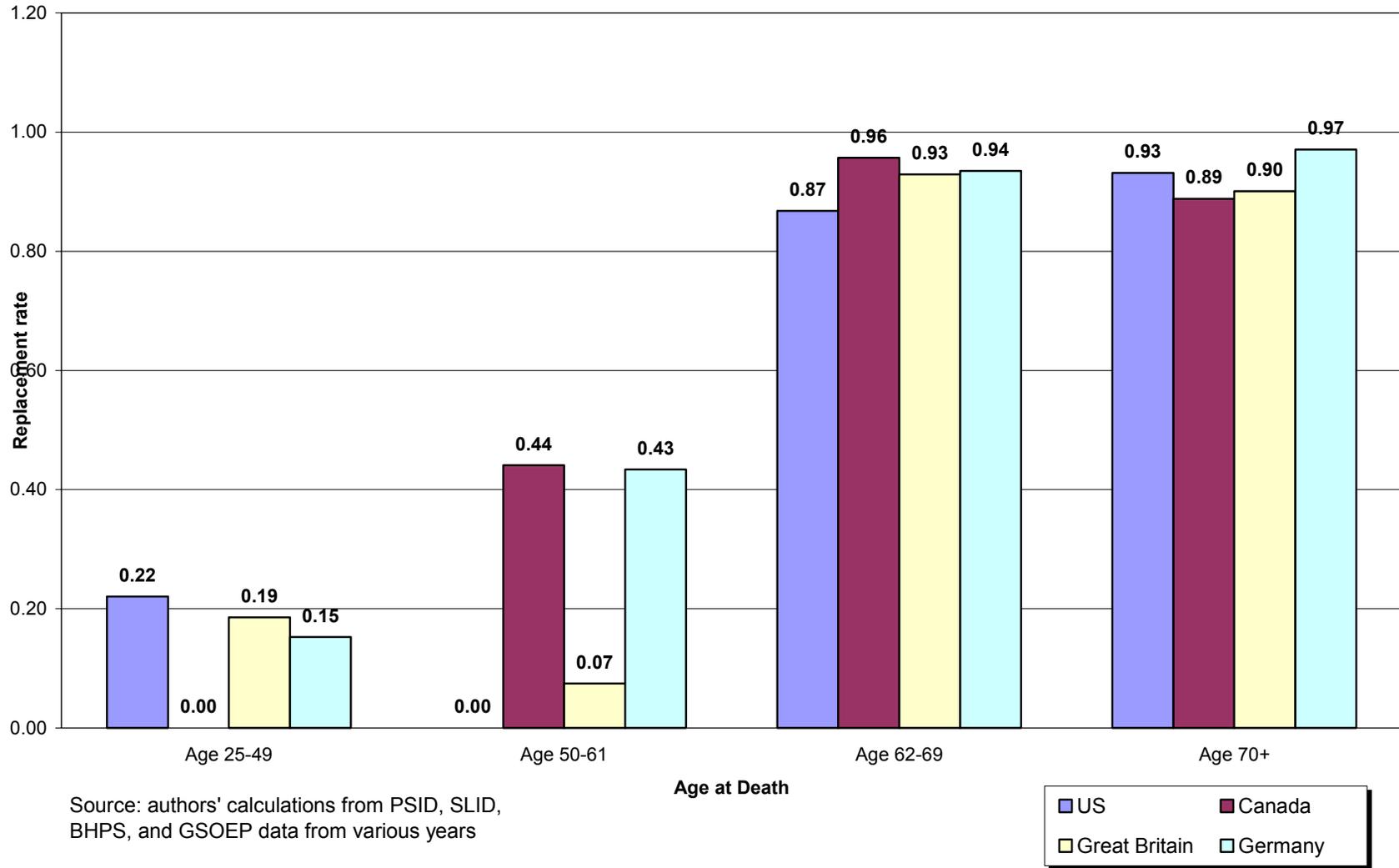
Figure 3. Median Survivors' Post-Government Income Replacement Rate in the US, Canada, Great Britain, and Germany by Age at Death of Head or Spouse (e=0.5)

Source: authors' calculations from PSID, SLID, BHPS, and GSOEP data from various years
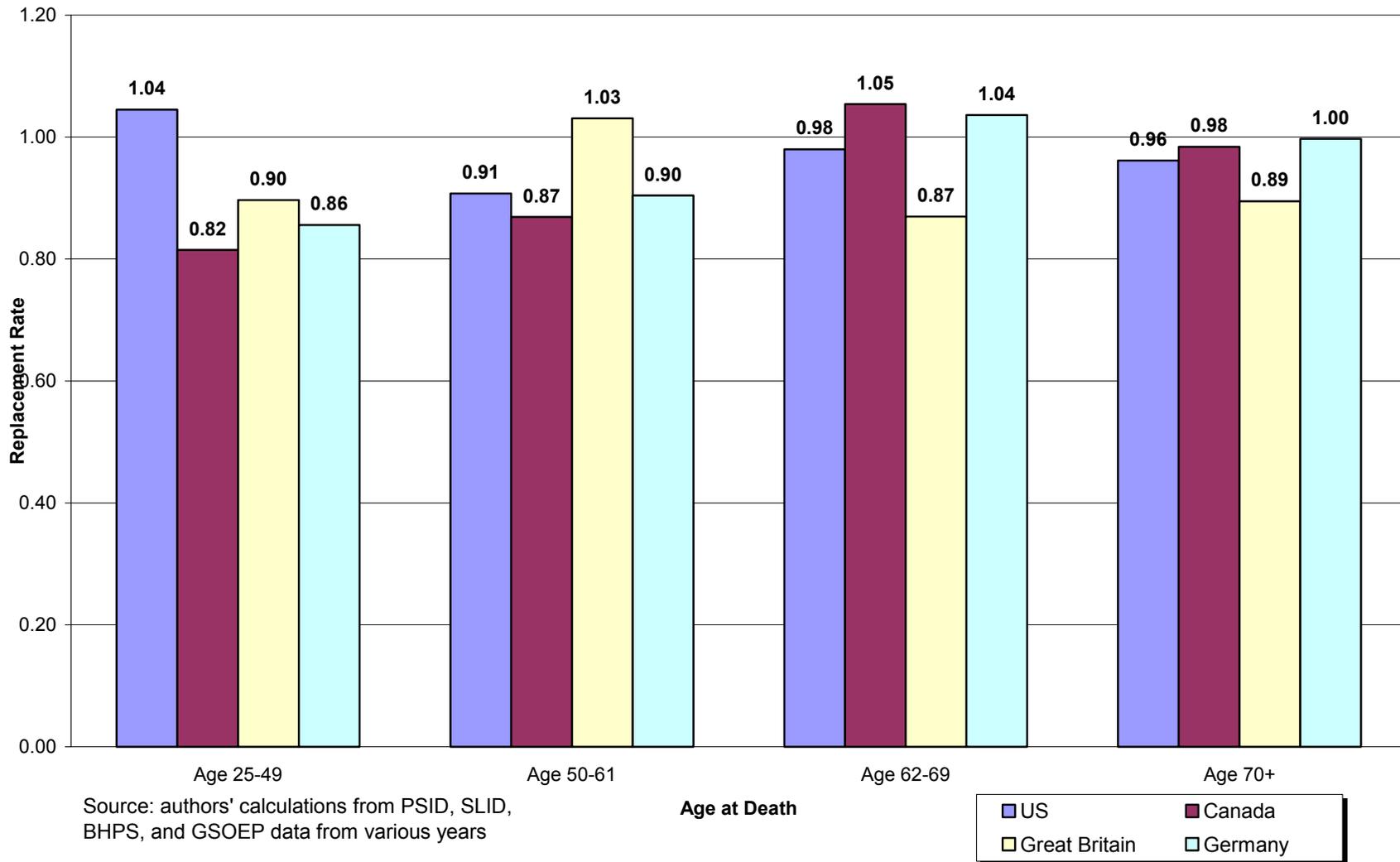
Figure 4. Median Widows Social Security Replacement Rate in the US, Canada, Great Britain, and Germany, by Their Husbands' Age at Death (e=0.5)

Source: authors' calculations from PSID, SLID, BHPS, and GSOEP data from various years

Legend: US, Canada, Great Britain, Germany

60
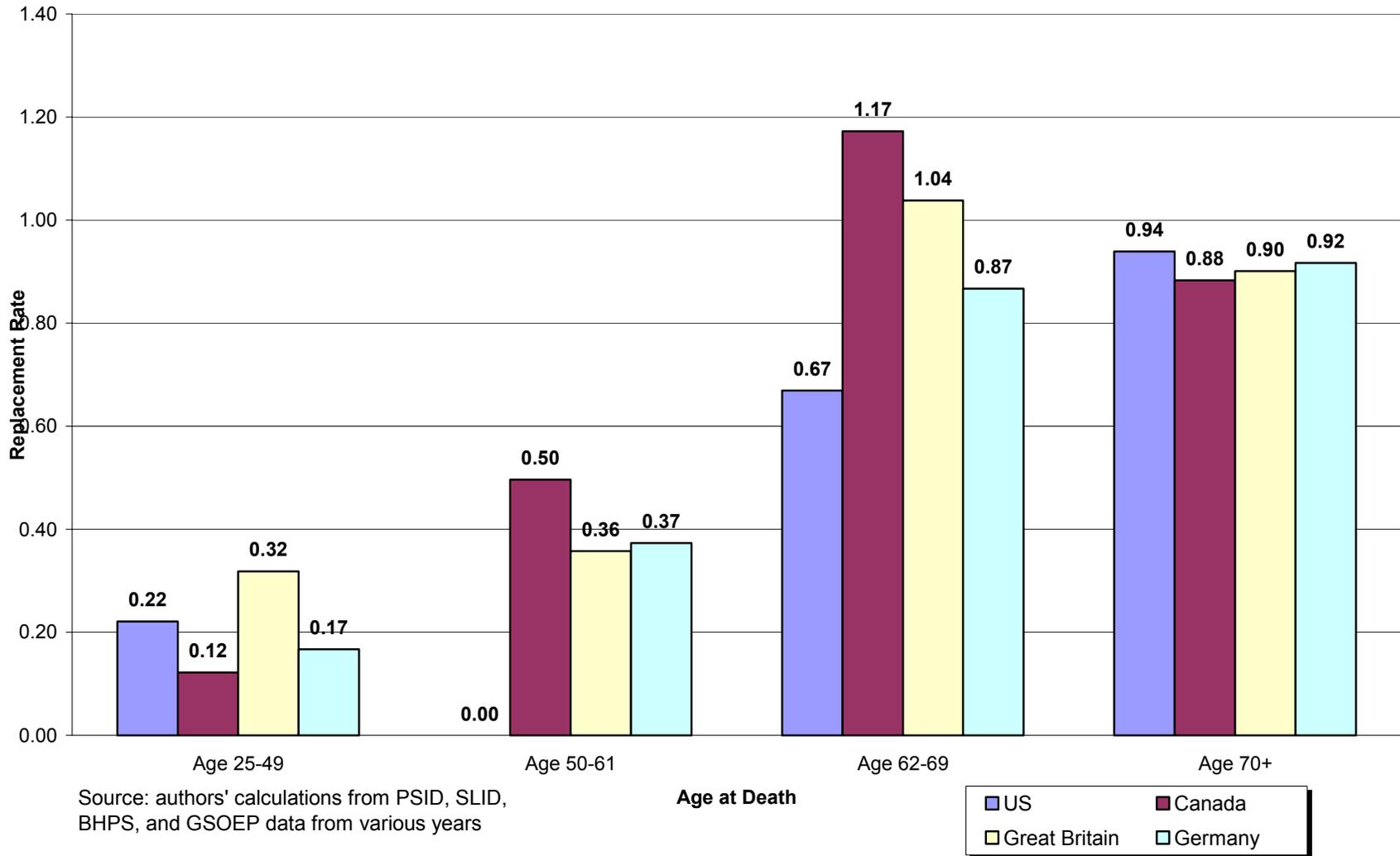
Figure 5. Median Widows' Post-Government Income Replacement Rate in the US, Canada, Great Britain, and Germany by Husbands' Age at Death (e=0.5)

Source: authors' calculations from PSID, SLID, BHPS, and GSOEP data from various
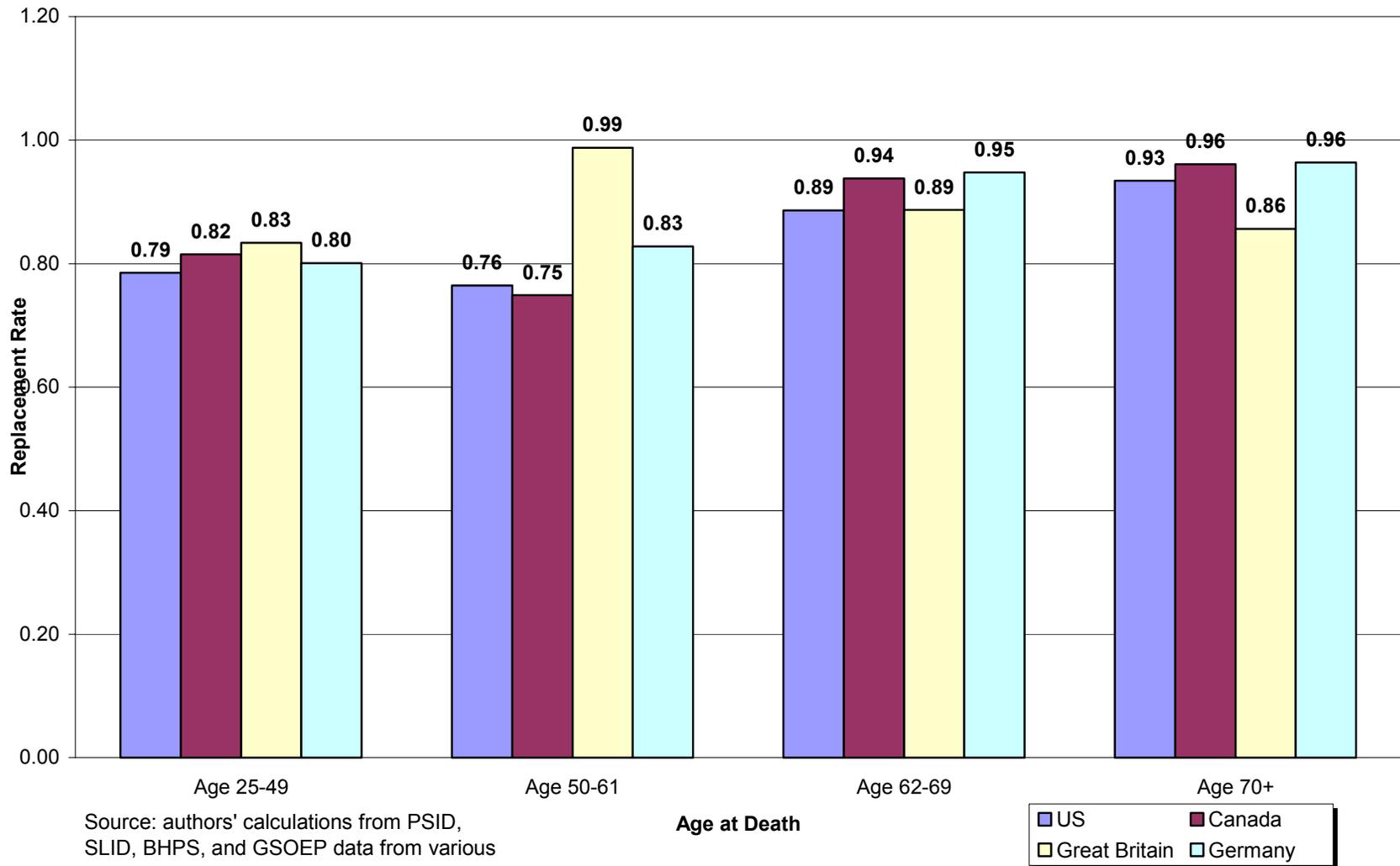
Appendix Table 1A. Definitions and Detailed Listing of Components of Income Categories.

Income Category	Canada	Germany	Great Britain	United States
Private sources				
Labor income	Includes -wages and salaries -net income of farm owners-operators -net income of owner-operators of unincorporated businesses	Includes -wages and salaries -reported earnings of self-employed	Includes -wages and salaries -reported earnings of self-employed	Includes -wages and salaries -75% of positive farm income -75% of business income -reported earnings of self-employed
Own		Labor earnings of the person who exited the labor force (while still living)		
Others'		Labor earnings of all other household members		
Survivor		Labor earnings of the surviving spouse or eldest next-of-kin		
Deceased		Labor earnings of the deceased		
Private transfers	Income of all household members from: -alimony and child support (including court-ordered) -other taxable 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 the head and wife from: -child support -help from relatives -other transfer income
Retirement plans	Income of all household members from: -employer pensions -annuities from Registered Retirement Savings Plans (RRSP) -withdrawals from Registered Retirement Income Funds (RRIF)	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	Income of all household members from: -Veterans' pensions -other retirement income -employer pensions -annuity income

Appendix Table 1A. Continued

Income Category	Canada	Germany	Great Britain	United States
Imputed rents	Equals 6 percent of the net equity ownership of a household's residence (not available in SLID)			
Income from assets	Income of all household members from: -Interest -net dividends -other investment income	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	The sum of income of the head 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

Public sources

Income Category	Canada	Germany	Great Britain	United States
Social insurance income	Income of all household members from: -Old-Age Security -Guaranteed Income Supplement -Survivors Allowance -Spouse's Allowance -Canada/Quebec Pension Plan	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 -widow or war widows pension -widowed mothers allowance -Invalidity pension	Income of all household members from: -Old-Age Insurance -Disability Insurance -Survivors Insurance

Appendix Table 1A. Continued

Income Category	Canada	Germany	Great Britain	United States
Public transfers	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	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	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

Appendix Table 1A. Continued

Income Category	Canada	Germany	Great Britain	United States
Taxes	Actual total household taxes, including: -Federal taxes -Provincial 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	Estimated total household taxes, including: -Social Security contributions (payroll taxes) -State taxes -Federal taxes
Net-of-Tax Household Income		Sum of all income components - taxes		

Sources: The Cross-National Equivalent File Codebook 1980-1998, Panel Study of Income Dynamics Users Manuals 1980-1997, British Household Panel Survey User Manual Volumes A-H, German Socio-Economic Panel SOEPINFO 1984-1998, Codebook prepared for Survey of Labour and Income Dynamics portion of Cross-National Equivalent File Codebook, 1998.

Appendix Table 2A. Mean Household Income of Survivors in the United States and its Sources Before and After Death of Household Head or Spouse (1996 U.S. Dollars).

Income Source	Aged 25 through 49					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	52532	51167	48966	9444	9658	9869
Survivor's Labor Income	12686	10764	10234	6708	7787	7761
Deceased's Labor Income	36754	37674	36062	0	0	0
Others' Labor Income	3092	2729	2669	2737	1871	2108
Private Transfers	1369	2006	1021	479	1088	1105
Private Pensions	343	316	354	626	1028	931
Assets	5759	1686	1268	6217	5796	7130
Public Sources						
Transfers	2030	525	1153	843	894	327
Social Security	424	373	993	9325	10305	8997
Taxes	14054	15046	11253	10548	3364	3520
Post-Government	48147	40452	42021	12711	19243	18288

Income Source	Aged 50 through 61					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	46608	46387	41703	17635	17530	19869
Survivor's Labor Income	13540	12487	12393	12276	11182	11230
Deceased's Labor Income	26790	25390	21729	0	0	0
Others' Labor Income	6278	8510	7581	5359	6348	8639
Private Transfers	2196	2260	2856	2548	2357	2022
Private Pensions	2225	2226	3213	2919	2855	2978
Assets	2440	1952	3198	6153	10003	5640
Public Sources						
Transfers	581	1044	849	310	539	699
Social Security	1818	2119	2643	3347	3572	3455
Taxes	14093	10111	10046	8556	9341	5627
Post-Government	39781	43452	41570	21744	24643	26362

Appendix Table 2A. Continued

Income Source	Aged 62 through 69					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	30295	27251	17968	6406	4448	3736
Survivor's Labor Income	9171	7522	6657	4053	3575	3384
Deceased's Labor Income	17488	17010	10009	0	0	0
Others' Labor Income	3636	2719	1302	2353	874	352
Private Transfers	2901	2829	2727	1144	1412	1211
Private Pensions	5491	5375	7768	3787	3734	3953
Assets	2977	3661	3648	3828	4409	4691
Public Sources						
Transfers	643	608	493	377	289	237
Social Security	5246	6930	8458	6251	6411	6965
Taxes	7513	7054	8501	4631	4373	4671
Post-Government	36786	36457	29176	14998	13651	12973

Income Source	Aged 70 and over					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income						
Survivor's Labor Income	6106	4790	3748	1949	5510	3974
Deceased's Labor Income	917	924	988	997	754	705
Others' Labor Income	3801	2130	1504	0	0	0
Private Transfers	1387	1737	1256	953	4756	3269
Private Pensions	3176	3592	2870	1540	1003	1180
Assets	5296	5644	4841	2479	1674	1448
Public Sources	11411	10948	8827	5686	9115	7009
Transfers						
Social Security	323	216	237	201	362	178
Taxes	11680	12016	12123	8314	7756	7980
Post-Government	5035	3986	3220	2321	3444	2492

Source: Authors' calculations from the Panel Study of Income Dynamics 1976-1997
Notes: This is an unbalanced panel. Sample size varies across years. Sample sizes for those aged 25-49, 50-61, 62-69, and 70 and older respectively are 138-155, 152-173, 157-181, 257-323. A detailed list of the income types included in each category is in the appendix. No adjustments are made for household size.

Appendix Table 3A.   Mean Household Income of Survivors in Germany and its Sources Before and After Death of a Household Head or Spouse (1996 German Marks).

Income Source	Aged 25 through 49					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	76705	66315	66999	45589	44754	47597
Survivor's Labor Income	34457	25921	26270	36822	34264	40323
Deceased's Labor Income	36443	34339	33119	0	0	0
Others' Labor Income	5805	6055	7609	8767	10490	7274
Private Transfers	25	57	0	129	87	341
Private Pensions	136	117	0	2721	403	3302
Assets	2000	1703	1403	1652	1658	6282
Public Sources						
Transfers	3539	5290	5374	3025	2920	2467
Social Security	1848	1406	1914	6082	9634	5355
Taxes	22788	20134	20317	15393	14428	17145
Post-Government	62494	55444	56224	44819	46169	49627

Income Source	Aged 50 through 61					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	68570	71466	58904	31807	26266	22847
Survivor's Labor Income	24326	23300	22390	18903	18702	15080
Deceased's Labor Income	34414	36301	22213	0	0	0
Others' Labor Income	9831	11865	14300	12904	7564	7768
Private Transfers	0	0	95	951	845	73
Private Pensions	985	743	989	3672	1360	3793
Assets	724	1389	1818	1446	1386	1234
Public Sources						
Transfers	1904	2370	2228	2664	924	1090
Social Security	7138	8616	10295	12837	17916	17479
Taxes	21400	24130	18510	11172	10168	9124
Post-Government	59161	61867	57163	43902	40726	39662

Appendix Table 3 A Continued

Income Source	Aged 62 through 69					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	24327	16874	13472	11327	11623	10495
Survivor's Labor Income	5514	4171	2962	5125	5299	4184
Deceased's Labor Income	11047	6124	4580	0	0	0
Others' Labor Income	7766	6578	5929	6202	6325	6311
Private Transfers	186	4	82	0	0	0
Private Pensions	1050	1673	1695	1675	897	792
Assets	5753	6072	4071	5313	8067	12280
Public Sources						
Transfers	977	1246	1031	947	270	268
Social Security	23310	26039	30019	21865	22988	23826
Taxes	8774	6897	6585	8127	9826	10764
Post-Government	49381	47666	46426	35708	37173	40539

Income Source	Aged 70 and over					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	6232	5263	5586	5506	4912	2525
Survivor's Labor Income	1037	639	558	1761	1145	841
Deceased's Labor Income	1261	1125	1291	0	0	0
Others' Labor Income	3933	3499	3737	3745	3767	1685
Private Transfers	22	168	49	4	5	30
Private Pensions	2250	1779	1904	1238	1030	1396
Assets	3279	3194	2418	5048	2699	1948
Public Sources						
Transfers	262	494	194	347	289	300
Social Security	32327	32002	32782	23059	21795	22542
Taxes	4177	3821	4092	5443	3789	2847
Post-Government	42019	40897	40631	31646	28580	27820

Source: Author's calculations from the German Socio-Economic Panel 1984-2000.
Notes: This is an unbalanced panel. Sample size varies across years. Sample sizes for those aged 25-49, 50-61, 62-69, and 70 and older respectively are 58-84, 93-126, 89-150, 159-262. A detailed list of the income types include in each category is in the appendix. No adjustments are made for household size.

Appendix Table 4A. Mean Household Income of Survivors in Great Britain and its Sources Before and After Death of Household Head or Spouse (1996 British Pounds)

Income Source	Aged 25 through 49					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	24765	23301	21909	20483	15116	8336
Survivor's Labor Income	11587	10407	9476	11239	6494	6215
Deceased's Labor Income	8939	9212	9966	0	0	0
Others' Labor Income	10543	8253	7105	13567	11039	3766
Private Transfers	350	3	148	439	449	394
Private Pensions	199	78	84	908	710	765
Assets	765	649	825	802	253	753
Public Sources						
Transfers	1995	1977	2961	1919	1781	1748
Social Security	899	719	923	2453	3130	3064
Taxes	4394	3998	3227	4159	2440	1012
Post-Government	22152	20842	20882	20504	17136	12150

Income Source	Aged 50 through 61					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	22500	20338	18709	14033	12838	11721
Survivor's Labor Income	8474	8426	7370	7345	7140	5893
Deceased's Labor Income	9450	7463	6401	0	0	0
Others' Labor Income	8314	7245	7273	8104	6925	6514
Private Transfers	33	0	23	474	231	68
Private Pensions	880	1353	1678	2236	2546	3887
Assets	498	670	967	1173	1717	1219
Public Sources						
Transfers	2529	3699	3782	2302	1436	1859
Social Security	1133	988	1253	2948	3302	3179
Taxes	2796	2655	2713	1729	1666	1353
Post-Government	19649	21021	20788	18061	18751	17360

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	13203	9349	9468	6091	6958	10798
Survivor's Labor Income	6116	4304	4351	3863	4103	4272
Deceased's Labor Income	4200	3180	2792	0	0	0
Others' Labor Income	4163	2830	3228	2620	2854	6526
Private Transfers	63	36	41	105	53	0
Private Pensions	3665	3561	3844	2530	3156	2254
Assets	1714	1533	2079	741	1254	1313
Public Sources						
Transfers	1579	1768	2273	1212	859	759
Social Security	3293	3955	4360	4272	3999	4131
Taxes	2031	1376	1530	937	1326	2014
Post-Government	21445	18073	19588	12494	13880	16100

	Aged 70 and over					
Income Source	**t-3**	**t-2**	**t-1**	**t+1**	**t+2**	**t+3**
Private Sources						
Total Household Labor Income	3702	4713	4811	4298	3749	5067
Survivor's Labor Income	2105	2160	2227	2248	1944	2290
Deceased's Labor Income	426	331	628	0	0	0
Others' Labor Income	1459	2498	2269	2148	1894	2889
Private Transfers	42	60	81	63	29	42
Private Pensions	3163	3397	3475	2216	2300	2488
Assets	2081	2034	1836	1048	1225	1749
Public Sources						
Transfers	1045	1137	1299	797	1147	995
Social Security	5606	5775	5936	3981	3849	3894
Taxes	548	722	799	677	591	855
Post-Government	15764	16513	16370	11258	11101	13219

Source: Authors' calculations from the British Household Panel Study 1991-1999.
Notes: This is an unbalanced panel. Sample size varies across years. Sample sizes for those aged 25-49, 50-61, 62-69, and 70 and older respectively are 34-76, 43-107, 32-82, 123-240. A detailed list of the income types included in each category is in the appendix. No adjustments are made for household size.

Appendix Table 5A. Mean Household Income of Survivors in Canada and its Sources Before and After Death of Household Head or Spouse (1996 Canadian Dollars).

Income Source	Aged 25 through 49					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	49669	49735	53656	24841	30218	23731
Survivor's Labor Income	8265	11036	12923	12432	13270	9938
Deceased's Labor Income	23724	21952	23780	0	0	0
Other's Labor Income	17680	16747	16952	12410	16948	13794
Private Transfers	579	1359	5196	5879	619	1516
Private Pensions	236	491	400	1336	1113	1598
Assets	868	2029	1512	1129	340	(443)
Public Sources						
Transfers	4189	3407	2888	4378	2965	4187
Social security	63	559	556	3649	3586	3919
Taxes	11557	13332	13475	8718	6485	5028
Post -Government	44046	44248	50733	32494	32356	29480

Income Source	Aged 50 through 61					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	44270	42458	51557	26650	28984	22984
Survivor's Labor Income	16724	15935	17443	11422	11545	12797
Deceased's Labor Income	14094	10579	15187	0	0	0
Other's Labor Income	13452	15944	18927	15228	17438	10346
Private Transfers	4993	7394	1961	1133	1280	1172
Private Pensions	2522	3336	5133	3868	4490	4376
Assets	(879)	4329	4602	3477	3421	3345
Public Sources						
Transfers	3927	4094	4207	3722	4218	5022
Social security	2597	2949	4393	5410	5326	4965
Taxes	10196	12326	14239	7506	7613	6615
Post -Government	47234	52233	57615	36754	40106	35248

Appendix Table 5A 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	16534	11835	8733	11906	13150	15770
Survivor's Labor Income	8036	6382	4420	4632	4888	5927
Deceased's Labor Income	5098	2333	2070	0	0	0
Other's Labor Income	3400	3120	2243	7274	8262	9843
Private Transfers	2506	2346	1698	708	361	205
Private Pensions	9872	15988	12599	6342	6015	5757
Assets	2471	5676	3913	2621	3348	4592
Public Sources						
Transfers	4221	3293	2452	2275	2299	2151
Social security	9927	10747	11779	9096	9169	8568
Taxes	7568	7878	5858	4444	4649	5297
Post -Government	37962	42007	35316	28505	29692	31747

Aged 70 and over

Income Source	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	2512	3694	3279	5920	6580	8495
Survivor's Labor Income	1353	1080	909	1375	1571	1842
Deceased's Labor Income	382	147	226	0	0	0
Other's Labor Income	777	2468	2144	4545	5010	6653
Private Transfers	349	386	331	418	630	747
Private Pensions	10068	9633	9199	6354	4470	3770
Assets	5177	5344	4531	3807	3541	1815
Public Sources						
Transfers	924	1176	1248	1582	1794	1804
Social security	17741	17584	17632	11377	10915	10768
Taxes	3902	4159	3806	4135	3303	3223
Post -Government	32871	33657	32414	25323	24629	24177

Source: Authors' calculations from the Survey of labour and Income Dynamics 1993-1999.
Notes: This is an unbalanced panel. Sample size varies across years. Sample sizes for those aged 25-49 50-61 62-69 and 70 and older respectively are 23-59 26-79 41-109 158-380. A detailed list of the income types included in each category is in the appendix. No adjustments are made for household size.

Appendix Table 6A. Mean Household Income of Widows in the United States and its Sources Before and After Their Husbands' Death (1996 U.S. Dollars).

Income Source	Aged 25 through 49					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	52532	59009	50640	18782	9658	10133
Survivor's Labor Income	12686	10764	10953	6708	7787	8024
Deceased's Labor Income	367540	37674	36818	0	0	0
Others' Labor Income	3092	10570	2869	12075	1871	2108
Private Transfers	1369	2006	1002	473	1088	1033
Private Pensions	343	316	354	619	1028	931
Assets	5759	1686	1244	6201	5796	6665
Public Sources						
Transfers	2030	525	1153	843	894	327
Social Security	424	373	975	9452	10305	9454
Taxes	14054	15046	11366	10424	3364	3551
Post-Government	48147	48294	43581	22233	19242	19199

Income Source	Aged 50 through 61					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	53999	46387	42746	24502	21118	20066
Survivor's Labor Income	13540	12487	12531	12276	11182	11427
Deceased's Labor Income	26790	25390	22634	0	0	0
Others' Labor Income	13669	8510	7581	12226	9936	8640
Private Transfers	2196	2260	2823	2548	2357	1975
Private Pensions	2225	2226	3213	2919	2855	2978
Assets	2440	1952	3114	6153	10003	5510
Public Sources						
Transfers	581	1044	849	310	539	699
Social Security	1818	2119	2573	3347	3572	3415
Taxes	14093	10111	10164	8556	9341	5643
Post-Government	47172	43452	42495	28612	28230	26580

Appendix Table 6A Continued

Income Source	Aged 62 through 69					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	30295	27251	26134	11167	8924	8406
Survivor's Labor Income	9171	7522	7051	4464	3575	3726
Deceased's Labor Income	17488	17010	13623	0	0	0
Others' Labor Income	3636	2720	5460	6703	5349	4680
Private Transfers	2901	2829	2618	1141	1412	1184
Private Pensions	5491	5375	7684	3787	3734	3864
Assets	2977	3661	3816	3624	4352	4515
Public Sources						
Transfers						
Social Security	5246	6930	8273	6256	6306	6901
Taxes						
Post-Government	36787	36457	37767	20032	18140	17821

Income Source	Aged 70 and over					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	6106	4790	3748	3844	5510	3974
Survivor's Labor Income	917	924	988	997	754	705
Deceased's Labor Income	3801	2130	1504	0	0	0
Others' Labor Income	1387	1737	1256	2847	4756	3269
Private Transfers	3176	3592	2852	1512	1208	1180
Private Pensions	5296	5644	4807	2451	1668	1448
Assets	11411	10948	8763	5520	8987	7138
Public Sources						
Transfers	323	216	251	201	362	178
Social Security	11680	12017	12249	8358	7921	7975
Taxes	5035	3986	3198	2297	3422	2492
Post-Government	29865	30013	26998	16420	18730	14828

Source: Authors' calculations from the Panel Study of Income Dynamics 1976-1993
Notes: This is an unbalanced panel. Sample size varies across years. Sample sizes for those aged 25-49, 50-61, 62-69, and 70 and older respectively are 85-94, 105-119, 108-126, 201-252. A detailed list of the income types included in each category is in the appendix. No adjustments are made for household size.

Appendix Table 7A. Mean Household Income of Widows in Germany and its Sources Before and After Their Husband's Death (1996 German Marks).

Income Source	Aged 25 through 49					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources	87579	66263	65673	34512	35485	41693
Total Household Labor Income	23920	14674	15992	28357	26318	36338
Survivor's Labor Income	60070	46365	44805	0	0	0
Deceased's Labor Income	3590	5223	4877	6155	9166	5355
Others' Labor Income	0	96	0	214	155	513
Private Transfers	0	0	0	4493	720	4969
Private Pensions	747	384	381	994	1057	3132
Assets						
Public Sources	3773	6226	6726	3798	3642	2490
Transfers	0	373	1287	8345	14614	7062
Social Security	26021	20013	20099	11337	10875	14750
Taxes	67356	54146	54847	41813	45818	46452
Post-Government	87579	66263	65673	34512	35485	41693

Income Source	Aged 50 through 61					
	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	58980	63164	57811	41584	38313	36053

Appendix Table 7A. Continued

Income Source	**Aged 62 through 69**					
	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	52514	52082	49395	36240	37653	40616

Income Source	**Aged 70 and over**					
	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	43305	41615	41767	31382	29343	27420

Source: Author's calculations from the German Socio-Economic Panel 1984-2000.
Notes: This is an unbalanced panel. Sample size varies across years. Sample sizes for those aged 25-49, 50-61, 62-69, and 70 and older respectively are 30-48, 59-84, 66-112, 141-206. A detailed list of the income types include in each category is in the appendix. No adjustments are made for household size.

Appendix Table 8A. Mean Household Income of Widows in Great Britain and its Sources Before and After Their Husbands Death (1996 British Pounds).

Income Source	Aged 25 through 49					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	24598	25412	20561	16176	9454	7767
Survivor's Labor Income	7013	8222	7219	7862	6449	4835
Deceased's Labor Income	12066	13262	12208	0	0	0
Others' Labor Income	7351	4530	2958	8314	3005	2931
Private Transfers	196	0	18	148	131	684
Private Pensions	286	84	92	1306	773	846
Assets	625	510	1161	1376	212	668
Public Sources						
Transfers	2889	1855	2886	1487	1232	1397
Social Security	670	695	898	2828	2751	2428
Taxes	4299	4556	3072	3147	1193	926
Post-Government	20830	21607	19776	17699	12548	11355

Income Source	Aged 50 through 61					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	26553	20459	16399	16176	12995	10588
Survivor's Labor Income	8685	7011	5617	7862	5083	3791
Deceased's Labor Income	14718	10699	9257	0	0	0
Others' Labor Income	9215	5272	3657	8314	8303	6799
Private Transfers	0	0	21	148	170	49
Private Pensions	1059	1337	1663	1306	2523	3056
Assets	740	1161	1347	1376	2474	1211
Public Sources						
Transfers	2710	4096	4271	1487	822	1036
Social Security	1227	951	1430	2828	3711	3698
Taxes	3319	2839	2495	3147	1799	1288
Post-Government	21247	21864	20435	17699	19923	17164

Appendix Table 8A Continued

Income Source	Aged 62 through 69					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	10005	7657	8721	4169	6462	10427
Survivor's Labor Income	4720	3979	3203	2245	3165	2714
Deceased's Labor Income	4281	3466	3135	0	0	0
Others' Labor Income	2647	1544	3105	2011	3297	7714
Private Transfers	190	48	34	22	59	0
Private Pensions	3979	3939	4462	1723	1814	1622
Assets	2685	2069	1764	729	1865	1708
Public Sources						
Transfers	1595	1920	2548	531	292	334
Social Security	2759	3480	3697	3697	4789	4878
Taxes	1539	1032	1066	510	1023	1604
Post-Government	19475	16652	18396	10403	14118	15842

Income Source	Aged 70 and over					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	2251	3463	3298	2499	1712	1791
Survivor's Labor Income	1168	1100	993	862	246	212
Deceased's Labor Income	599	371	921	0	0	0
Others' Labor Income	649	2101	1586	1659	1468	1579
Private Transfers	46	87	85	57	31	60
Private Pensions	3624	3523	3684	2027	1819	2133
Assets	2503	2595	2223	871	1024	1270
Public Sources						
Transfers	939	1014	973	753	1065	909
Social Security	5840	5948	6155	4147	4040	4060
Taxes	312	577	555	451	312	392
Post-Government	15358	16469	15605	9684	9246	10133

Source: Authors' calculations from the British Household Panel Study 1991-1999.
Notes: This is an unbalanced panel. Sample size varies across years. Sample sizes for those aged 25-49, 50-61, 62-69, and 70 and older respectively are 12-24, 17-40, 16-35, 82-145. A detailed list of the income types included in each category is in the appendix. No adjustments are made for household size.

Appendix Table 9A. Mean Household Income of Widows in Canada Before and After Their Husbands' Death (1996 Canadian Dollars).

Income Source	Aged 25 through 49					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	47940	50830	54177	23515	36006	29791
Survivor's Labor Income	18002	20934	23254	20987	23454	16586
Deceased's Labor Income	26377	25042	27730	0	0	0
Other's Labor Income	3561	4854	3192	2528	12552	13205
Private Transfers	1454	2261	5034	9762	882	578
Private Pensions	0	125	105	1172	942	2329
Assets	1262	2008	1262	1798	1424	928
Public Sources						
Transfers	4311	2646	2378	4691	2744	3358
Social security	120	1014	980	4430	3885	3185
Taxes	11018	13464	13289	10142	8048	6193
Post -Government	44070	45420	50648	35228	37836	33976

Income Source	Aged 50 through 61					
	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	31073	32510	39805	19993	20753	14163
Survivor's Labor Income	8779	11165	16429	6735	6937	7602
Deceased's Labor Income	17721	14257	16047	0	0	0
Other's Labor Income	4573	7089	7329	13258	13815	6561
Private Transfers	6325	8270	2201	929	1322	1450
Private Pensions	2457	2858	5737	3345	4610	6052
Assets	1257	1259	1878	2794	2264	1555
Public Sources						
Transfers	3300	2546	3947	3753	3591	2914
Social security	4486	4316	5875	6246	5912	5622
Taxes	7885	9594	10674	5863	5919	4964
Post -Government	41012	42165	48768	31198	32531	26791

Appendix Table 9A Continued

Income Source	t-3	t-2	Aged 62 through 69 t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	17370	11497	7298	7023	8105	9254
Survivor's Labor Income	7141	5174	3126	2294	1625	1275
Deceased's Labor Income	8503	3912	2779	0	0	0
Other's Labor Income	1726	2412	1393	4729	6479	7979
Private Transfers	1479	1421	1451	866	423	318
Private Pensions	10214	12816	9952	4960	5119	4868
Assets	2359	5584	4381	2677	3013	2924
Public Sources						
Transfers	5168	4046	2560	2096	2035	2127
Social security	9497	10564	12092	9959	9931	9840
Taxes	7860	6841	4937	3322	3479	4052
Post -Government	38227	39087	32796	24258	25146	25280

Income Source	t-3	t-2	Aged 70 and over t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	1656	1464	1300	3283	4395	5448
Survivor's Labor Income	499	409	281	720	672	646
Deceased's Labor Income	565	178	213	0	0	0
Other's Labor Income	592	877	807	2563	3723	4802
Private Transfers	331	419	366	269	274	380
Private Pensions	9656	8560	8124	5188	3721	3174
Assets	5417	5554	4883	4209	4169	2114
Public Sources						
Transfers	890	728	802	1221	1340	1111
Social security	17819	17800	17984	11692	10909	10834
Taxes	3644	3398	3215	3622	2875	2921
Post -Government	32125	31126	30245	22240	21932	20140

Source: Authors' calculations from the Survey of Labour and Income Dynamics 1993-1999.
Notes: This is an unbalanced panel. Sample size varies across years. Sample sizes for those aged 25-49 50-61 62-69 and 70 and older respectively are 23-59 26-79 41-109 158-380. A detailed list of the income types included in each category is in the appendix. No adjustments are made for household size.

Appendix Table 10A. Sample sizes for Survivors' Mean Post-Government Income in Years Before and After Death of Head or Spouse

Sample	t-3	t-2	t-1	t+1	t+2	t+3	Min	Max
PSID								
Age 25-49	138	147	155	145	140	139	138	155
Age 50-61	152	167	173	162	161	160	152	173
Age 62-69	170	175	181	166	160	157	157	181
Age 70+	303	315	323	287	268	257	257	323
SLID								
Age 25-49	100	165	217	201	134	90	90	217
Age 50-61	77	121	190	200	155	106	77	200
Age 62-69	81	123	188	189	149	104	81	189
Age 70+	288	432	573	464	338	227	227	573
BHPS								
Age 25-49	57	67	76	65	43	34	34	76
Age 50-61	70	82	107	83	64	43	43	107
Age 62-69	59	75	82	58	40	32	32	82
Age 70+	174	209	240	181	152	123	123	240
GSOEP								
Age 25-49	58	74	84	77	66	59	58	84
Age 50-61	107	119	126	103	93	83	83	126
Age 62-69	134	145	150	127	106	89	89	150
Age 70+	219	249	262	212	181	159	159	262

Source: authors' calculations from Panel Study of Income Dynamics 1976-1997, Survey of Labour and Income Dynamics 1993-1999, British Household Panel Study 1991-1999, and German Socio-Economic Panel 1984-2000.

Appendix Table 11A. Sample sizes for Widows' Mean Post-Government Income in Years Before and After Their Husbands' Death

Sample	t-3	t-2	t-1	t+1	t+2	t+3	Min	Max
PSID								
Age 25-49	86	92	94	90	85	85	85	94
Age 50-61	105	115	119	112	112	111	105	119
Age 62-69	120	122	126	116	111	108	108	126
Age 70+	238	247	252	225	210	201	201	252
SLID								
Age 25-49	27	42	59	49	37	23	23	59
Age 50-61	26	42	74	79	63	41	26	79
Age 62-69	41	63	102	109	87	64	41	109
Age 70+	193	286	380	320	235	158	158	380
BHPS								
Age 25-49	17	22	24	19	14	12	12	24
Age 50-61	27	30	40	32	26	17	17	40
Age 62-69	20	29	35	25	17	16	16	35
Age 70+	109	132	145	117	96	82	82	145
GSOEP								
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

Source: authors' calculations from Panel Study of Income Dynamics 1976-1997, Survey of Labour and Income Dynamics 1993-1999, British Household Panel Study 1991-1999, and German Socio-Economic Panel 1984-2000.