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Long-term Labor Force Exit and Economic Well-being: A Cross-National Comparison of Public and Private Income Support

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Introduction

Work in the marketplace is the primary source of income for most households in modern industrialized societies. A permanent or even a long-term exit from work by a household's principal earner is therefore a potentially risky economic event.[1] Most 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 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 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 earnings following an exit from the labor market. Certainly in the United States, but also in Canada, Great Britain, and in other industrialized countries, private employer fringe benefit packages provide protection following a labor force exit due to redundancy, disability, retirement or death. 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.

Studies, especially cross-national studies, of post-exit economic well-being often focus on how a given program (e.g., social security retirement, disability, or survivor's insurance, unemployment insurance, etc.) replaces lost earnings. 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 either a comparison of a hypothetical average worker's earnings history and that worker's

subsequent social security benefits across various countries or the use of cross-sectional data from various countries to compare persons of a given age who are working relative to those who are not.[2] (See Gruber and Wise, 1999 for an example of the former strategy and many studies using the comparable cross-sectional data from the Luxembourg Income Study for examples of the latter).

Cross-national comparisons using such data 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 they are unable to trace changes in economic well-being across actual households.[3]

In this paper we take advantage of a newly expanded source of cross-national panel data, the Cross-National Equivalent File (CNEF), which contains comparable socio-economic information on households in four modern industrial societies (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 well-being 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 in this population by requiring men to have three consecutive years of employment (measured as at least 52 hours of market work for which a worker is paid 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).[4] In our analysis of the consequences of death on 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 United States households following the death of a head or spouse between 1976 and 1993, regardless of their labor force status at the time of their death.

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 1998 for Germany, from 1990 to 1997 for Great Britain and from 1993 to 1994 for Canada.[5] 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, 2000).

In this paper, we take full advantage of the panel nature of the CNEF data to first estimate the age-specific risk of a long-term non-death labor market exits for men across the four countries in the 1990s and then to trace the consequences of such exits on their 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 men prior to and following a long-term labor market exit. 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 between the ages of 25 through 75.[6] Each of these men experienced the beginning of a long-term labor market exit sometime between 1990 and 1998.[7] We then use data from the United

States to trace the consequences of the death of a head or spouse on the household income of surviving household members. To do so, we use an unbalanced panel of men and women, age 25 and older, who died sometime between 1976 and 1993.[8]

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.[9]

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).[10] This approach allows us to estimate the risk of a worker experiencing a long-term labor market exit at any given age.[11] The sample periods under study as a possible last year of long-term employment are 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.[12]

Figure 1 shows the pattern of long-term labor market exits for men aged 55 to 67.[13] 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.[14] 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.[15]

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 average net of tax 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.[16]

In the United States, decreases in the earnings of men who exit the labor force at older ages are almost equally offset by increases in their household's social security and private pension income. For men who exit at middle ages, increases in private pension

income dominate. At younger ages, increases in other public and private income dominate.

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 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 implication 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 net-of-tax household income is available following such an exit and does so disproportionately for the United States and Canada.

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 (net-of-tax household income prior to labor market exit to net-of-tax 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 surprisingly, it is Canada that has the highest total replacement rate for the median man who exits at these older ages. The common expectation among researchers is that the European countries replace more income post-retirement than do the United States or Canada. The gap between the median social security earnings replacement rate and the median total replacement rate is even greater for men who exit the labor force at younger ages.

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.[17] 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 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 Wife

We now turn to our analysis of the economic well-being of households following the death of a head or spouse. While we will extend this analysis to the other three countries in our sample, we present results here only for the United States. As in the above analysis, 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 capture outcomes of those who die while transitioning into retirement and those who do so after they are out of the labor force. We present our results for the sample of households whose head or spouse die as well as for a subsample of households of surviving widows.

Table 3 shows how mean household income and its sources vary from three years before to three years after the death of a head or spouse within our four age categories. Not surprisingly, the death of a head or spouse at age 25-49 has a dramatic impact on household labor income. In the year prior to death, mean household labor earnings are $61,443 of which $27,399 is from the person who will die in the next year. While the survivor's labor earnings and those of other household members increase in the year following the death of a head or spouse, household labor earnings are on average only $42,907 in the year after the death of a head or spouse. This decline in household labor earnings is offset to some degree by increases in other private sources of income and in

social security income as well as by a decline in taxes paid, so that net of tax total household income falls by a smaller percentage.

The death of a head or spouse aged 50-61 yields similar results. Household labor earnings fall even more precipitously from $48,507 in the year before to $27,236 in the year after death of the head or spouse. But increases in other private sources of income and in social security income as well as a reduction in taxes paid on that income, mitigate to a substantial degree the percentage decline in total net-of-tax household income.

The death of a head or spouse age 62-69 results in about the same percentage decline in household labor income but a far smaller absolute decline since deaths at this age occur when labor force participation has already declined substantially. Private transfers and social security income are a more important component of income both before and after the death of a head or spouse. This income remains at approximately the same level over the period and hence reduces the relative drop in mean net-of-tax household income caused by lost earnings.

The death of a head or spouse at age 70 and above is no longer important with respect to labor earnings since few heads or spouses work at these ages. Rather, other private sources of income and social security income are the primary sources of household income. On average, the most important source of income is social security and these benefits fall from $13,291 in the year prior to death to $8,477 in the year after death. This decline approximates the decline in a joint and two-thirds annuity payment to the "traditional" household.[18]

In Appendix Table 2A we repeat this analysis for the subsample of households in which the survivor is a widow. The results follow the same pattern as discussed above for the household's of all survivors.

In Table 3 we compared the net-of-tax income of households before and after the death of a head or spouse. In so doing, we compared household income for households of different sizes. A large literature exists detailing the problems associated with measuring economic well-being at the individual level (Moon and Smolensky, 1977; Burkhauser, Smeeding, and Merz, 1996). Among the most difficult issues is how to compare the economic well-being of individuals who live in households of different sizes. One extreme is to assign a per capita share of household income to all household

members. 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 – that is, 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.

The assumption one makes about the returns to scale in household production is a particularly important issue when the comparison is of an event that by its very nature changes household size. If we simply compare net-of-tax total household income in Table 3 before and after the death of a head or spouse, we are effectively assuming perfect returns to scale. Alternatively, we could assume there no returns to scale and assign survivors 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:

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

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. This assumption is implicitly adopted in the comparisons of net-of-tax income shown in Table 3.

Burkhauser et al. (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).

In Table 4, we use the above formula to adjust net-of-tax household income values for period t-1 and t+1 shown in Table 3 for household size, using these three values of e. We explicitly label the resulting household size-adjusted values to indicate which value of (e) we use. Not surprisingly, individualized net-of-tax household income falls the higher is the value of (e) but more important for our purpose, the ratio of mean household size-adjusted net-of-tax income in t+1 to mean household size-adjusted net-of-tax income in t-1 (after and before death) varies dramatically with the choice of (e). In Appendix Table 3A we repeat this analysis for the subsample of households in which the survivor is a widow.

This variation can best be seen in Figure 2. Here we first calculate, for each household, the ratio of household size-adjusted net-of-tax income in t+1 to household size-adjusted net-of-tax income in t-1. We then find the median household's ratio in the sample for each age group. Using a per capita scale (e=1), we find the economic well-being of surviving household members rises, regardless of the age at which death occurred. On the other hand, when we assume perfect returns to scale (e=0), the economic well-being of surviving household members falls. The decline is larger at older ages. When a value of .5 is used, economic well-being of surviving household members before and after the death of a head or spouse is approximately the same.

Figure 3 repeats the analysis for each age-at-death group using the median replacement rate given by the household's social security income in the year after the death of the head or spouse divided by the deceased wages and household social security benefits in the year before his or her death. This ratio approximates the replacement rate concept used in the simulations typically done to measure the degree to which social security replaces lost earnings. The median household who experience the death of a head or spouse aged 25-49 or 50-61 had no social security income. Hence this measure greatly understates the actual income available after the death of a head or spouse. The median ratio for households whose head or spouse died between ages 62-69 follow the

same pattern shown in Figure 2 but at somewhat lower levels. The median ratio for households whose head or spouse died at ages 70 and older also follow the same pattern shown in Figure 2 but at about the same level. In Appendix Figures 1A and 2A we repeat this analysis for the households of surviving widows. The results are similar.

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 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 in the four countries (Canada, Germany, Great Britain, and the United States) we consider and less so for men who exit at younger ages. However, focusing solely on social security replacement rates would not only overstate the actual decline in net-of-tax household income that occurs following an exit from the labor market by men in all four countries but would disproportionately do so for the United States and Canada. 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 net-of-tax 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 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. Net-of-tax household income is in general higher than would be implied by social security replacement rates. The actual replacement rate, however, is sensitive to assumption made about returns to scale.

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Appendix

In this appendix we detail the components included in each of the broad income categories described above. Table 1A lists the components of income measured in each country's survey and how we've allocated them to our broad income categories. More detailed information about the income measures asked 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[1]

This document describes government transfer programs in Canada, with 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. 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.

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.

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

[1]Prepared by Philip Giles of Statistics Canada.

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

Worker’s 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[1]

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 being 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 the spouse of a worker) 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

[1] This Summary was prepared with the assistance of Stephen Jenkins and Richard Berthoud of Essex University.

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
[To be inserted]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

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
[To be inserted]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:
-

Child benefit

Program description
[To be inserted]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Lone parent benefit

Program description

[To be inserted]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

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 recipients must satisfy specific conditions to receive money and programs that transfer money to a specific group with no other condition attached. We also describe sources of private pension income and other transfer income from private sources. We generally divide public 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 pensions

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires "quid pro quo":

Invalidity pension

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires "quid pro quo":

Miner pension

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires "quid pro quo":

Farmer pension

Program description

[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

War victim pension

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Widow/widower allowance

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Civil servant pension

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Worker accident pension

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Unemployment benefit

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Unemployment relief

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Subsistence allowance

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Maternity benefit

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Student grant

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Supplementary civil servant pension

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Worker pension

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Company pension

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

Other pension

Program description
[To be added]

- Universal entitlement:
- Means tested:
- Requires “quid pro quo”:

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. 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. We treat death as a special case of labor market exit. We analyze the sample of men and women who die separately from those who exit the labor market while still alive.

2. 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.

3. Some studies employ a synthetic cohort approach using repeated cross-sections to show how income changes across age groups. Such methods may be confounded composition and age effects.

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

5. Although data for Canada are only publicly available for 1993-1994, SLID data from 1995-1998 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. We thank Phil Giles of Statistic Canada for assisting us on this paper.

6. 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.

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

8. Year of death is identified using the public use files of the Panel Study of Income Dynamics 1977-1993. In the next draft of this paper we will substantially increase our sample of households in which the head or spouse died because we have received permission to use a file of the PSID that identifies the date and cause of all PSID sample members who have died. The use of this file, known as the PSID Death File, is restricted.

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

10. 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.

11. 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.

12. 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.

13. 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 at ages with fewer than 35 men.

14. 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.

15. 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.

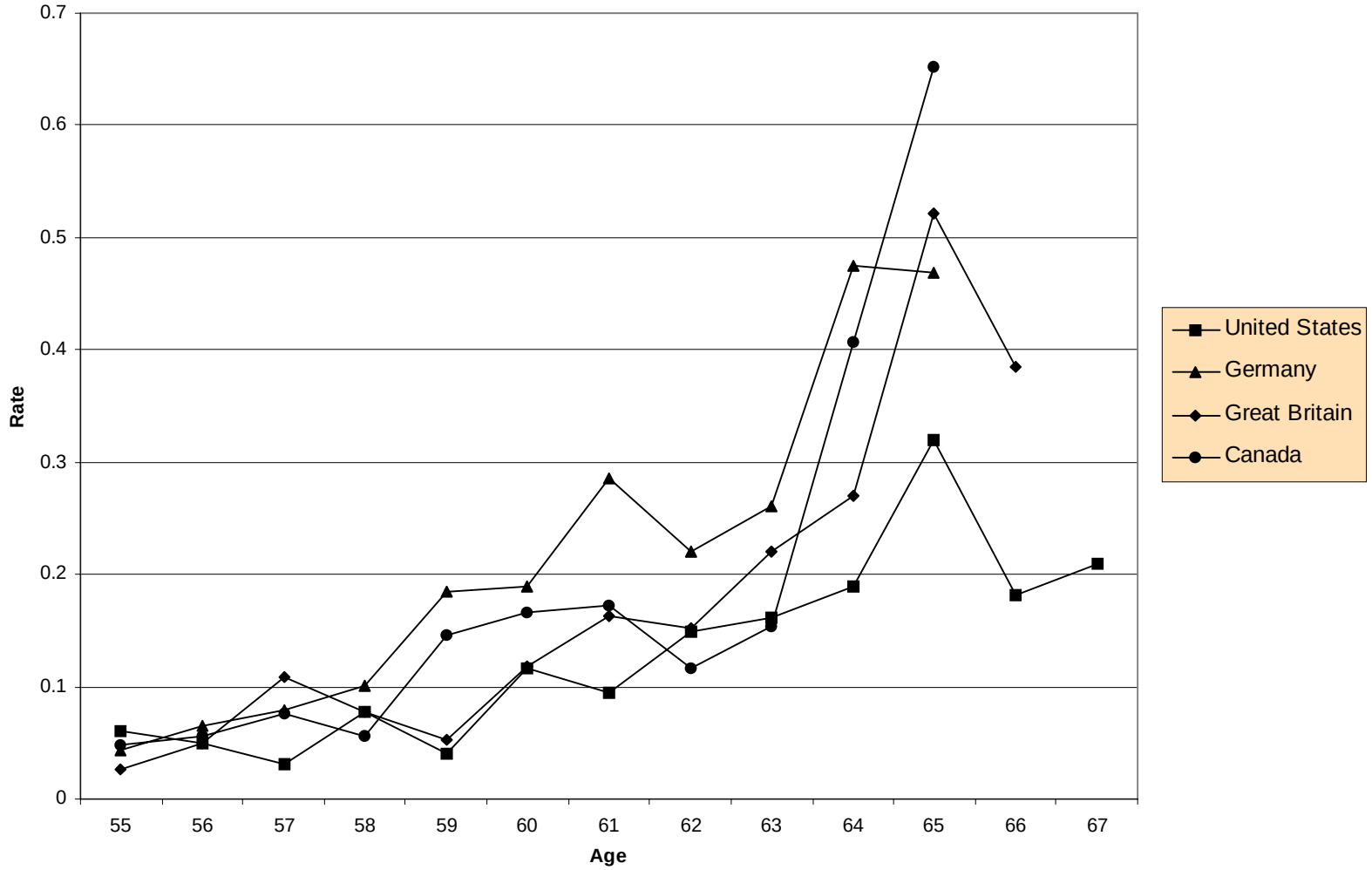
16. Income is non-zero in t+1 and t+2 because men who work no more than 52 hours per year are considered to have effectively left the labor force even if they have positive labor earnings. However, in Great Britain, the differences in the time unit for yearly income may also play a role at younger ages.

17. 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.

18. A worker's retirement benefit is based on an average of the worker's lifetime earnings (AIME). Over the period we analyze, a full benefit was paid to those who requested benefits at age 65. The benefit is the worker's primary insurance amount (PIA). For married workers, a spouse benefit is provided which equals 50 percent of the worker's PIA. At the death of the worker or the spouse, the survivor receives only the PIA amount. Hence a survivor's total

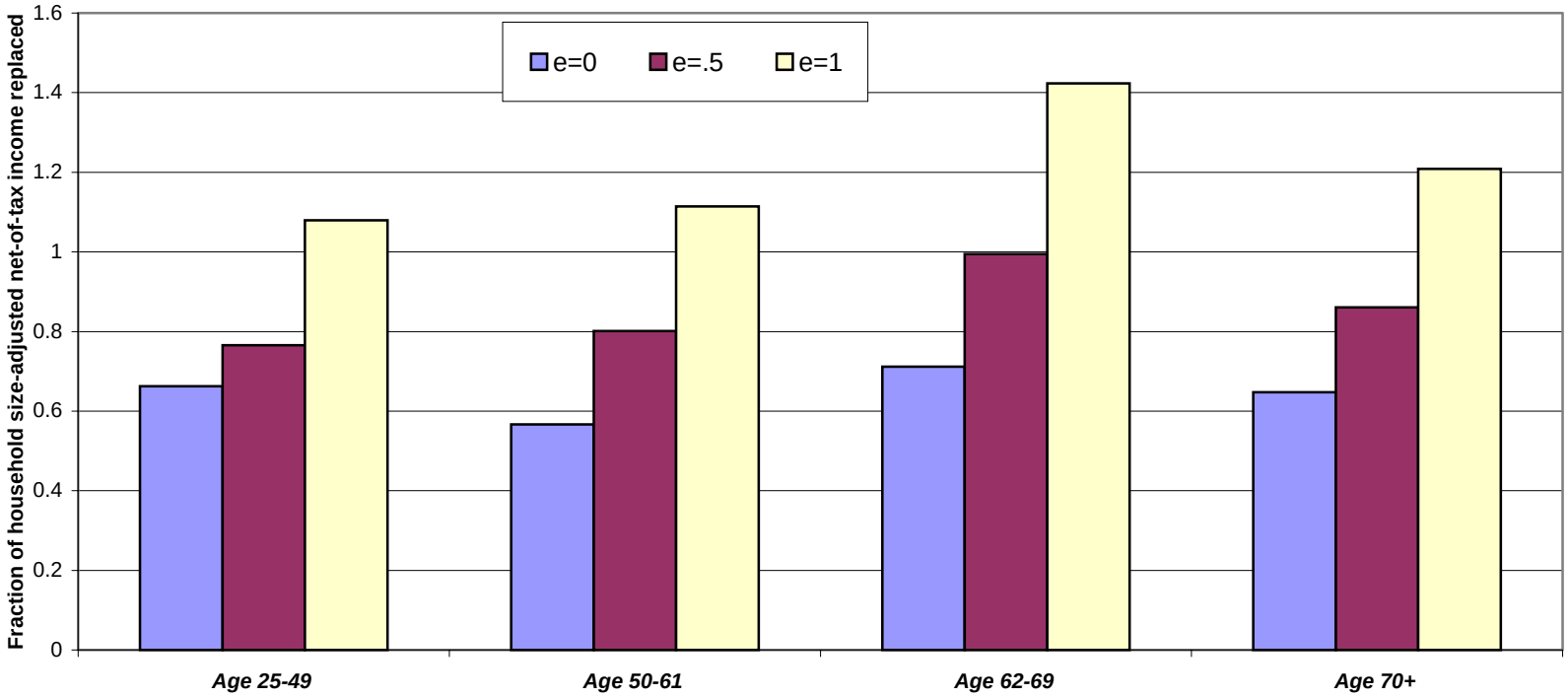
social security benefit would equal 67 percent of the benefit paid to the worker and spouse while both were alive. This ratio can fall as low as 50 percent in the case when a head and spouse have identical earnings histories. But for those who died at age 70 or older in this time period, most wives had much lower AIME than their husbands and hence were more likely to receive the husband's PIA as their survivor benefit rather than continuing to receive their own PIA.

Figure 1. Age-Specific Labor Force Exit Rates of Men in the 1990s, by Country



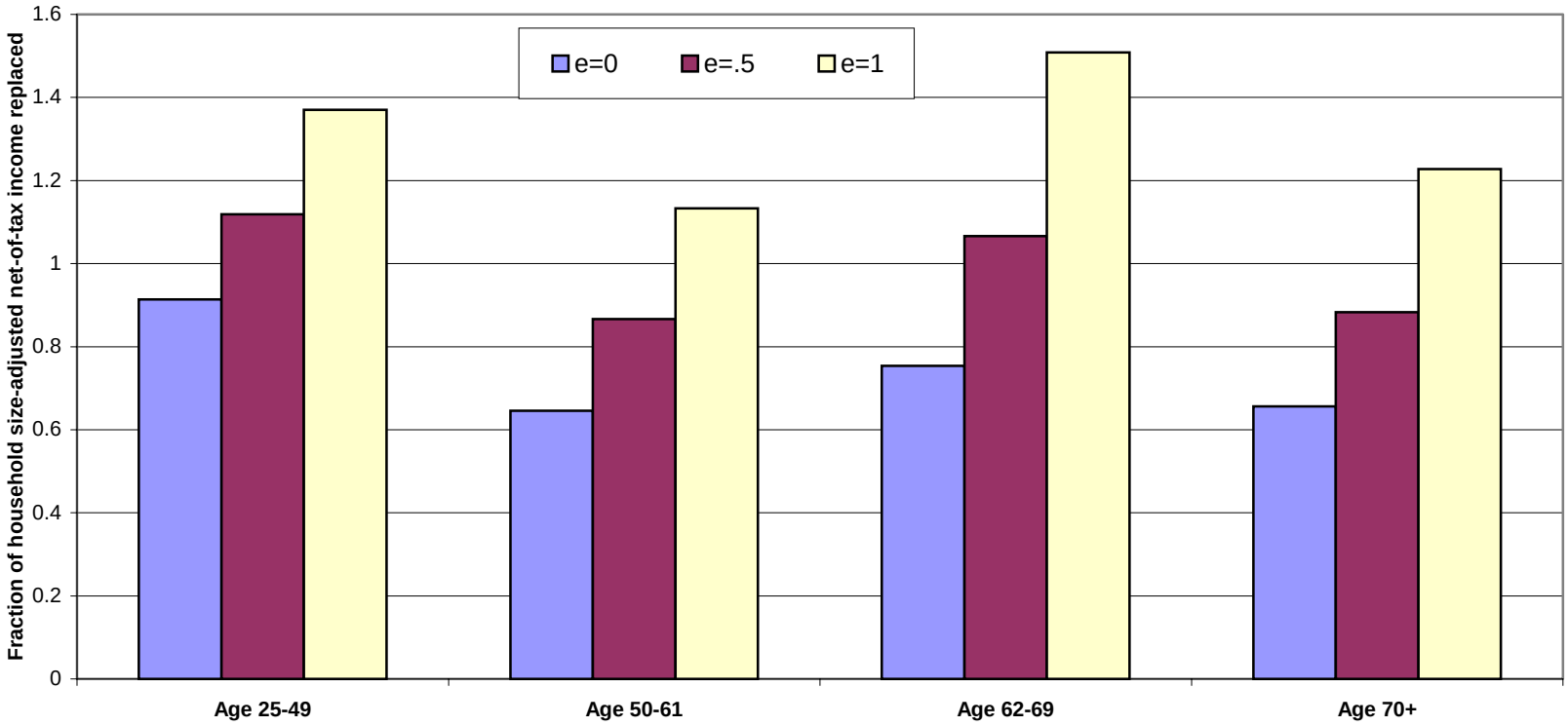
Source: Author's calculations

Figure 1 A. Median Widow's Net-of Tax Household Income Replacement Rate by Husband's Age at Death and Household Equivalence Scale.



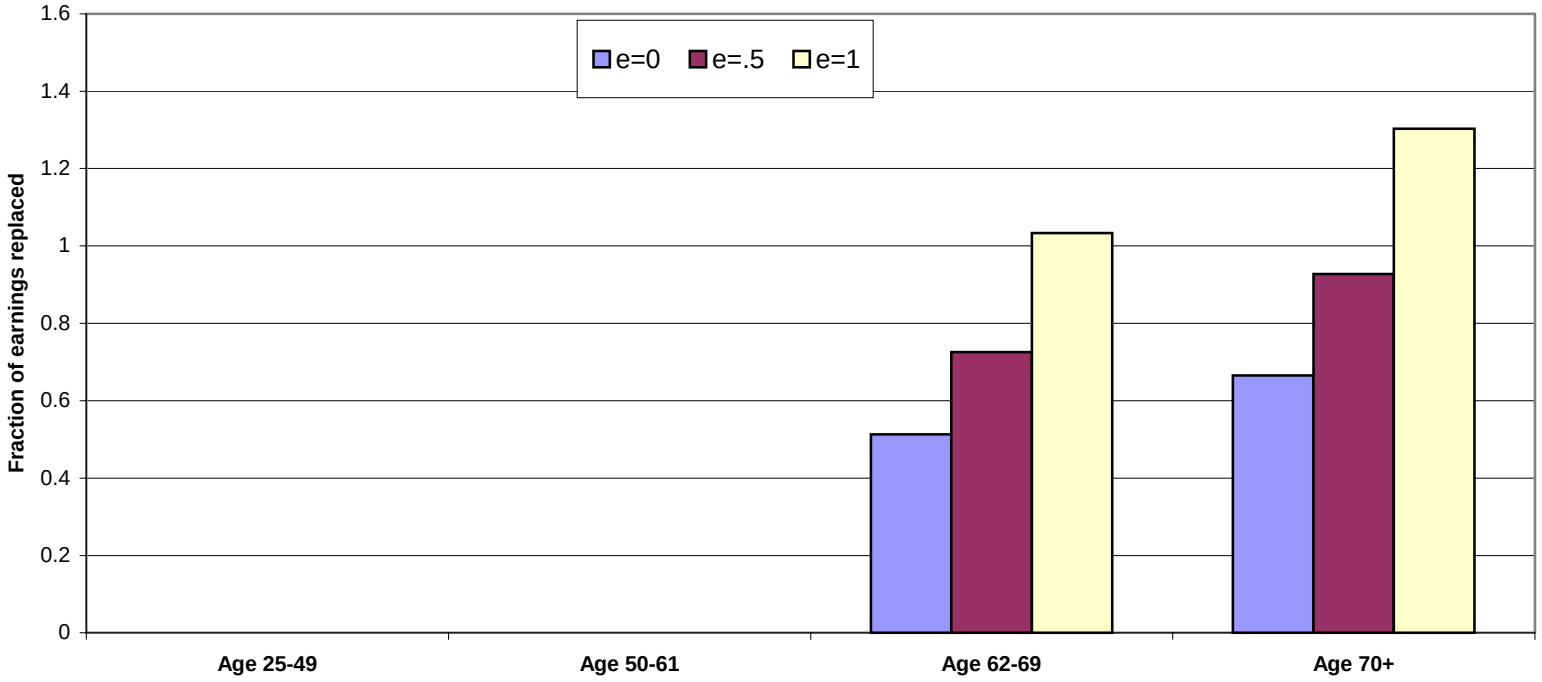
Source: authors' calculations based on PSID 1977-1993
Replacement rate defined as size-adjusted net-of-tax household income in year t+1 divided by size-adjusted net-of-tax household income in year t-1

Figure 2. Median Survivor's Net-of-Tax Household Income Replacement Rate by the Age at Death of Head or Spouse and Household Equivalence Scale.



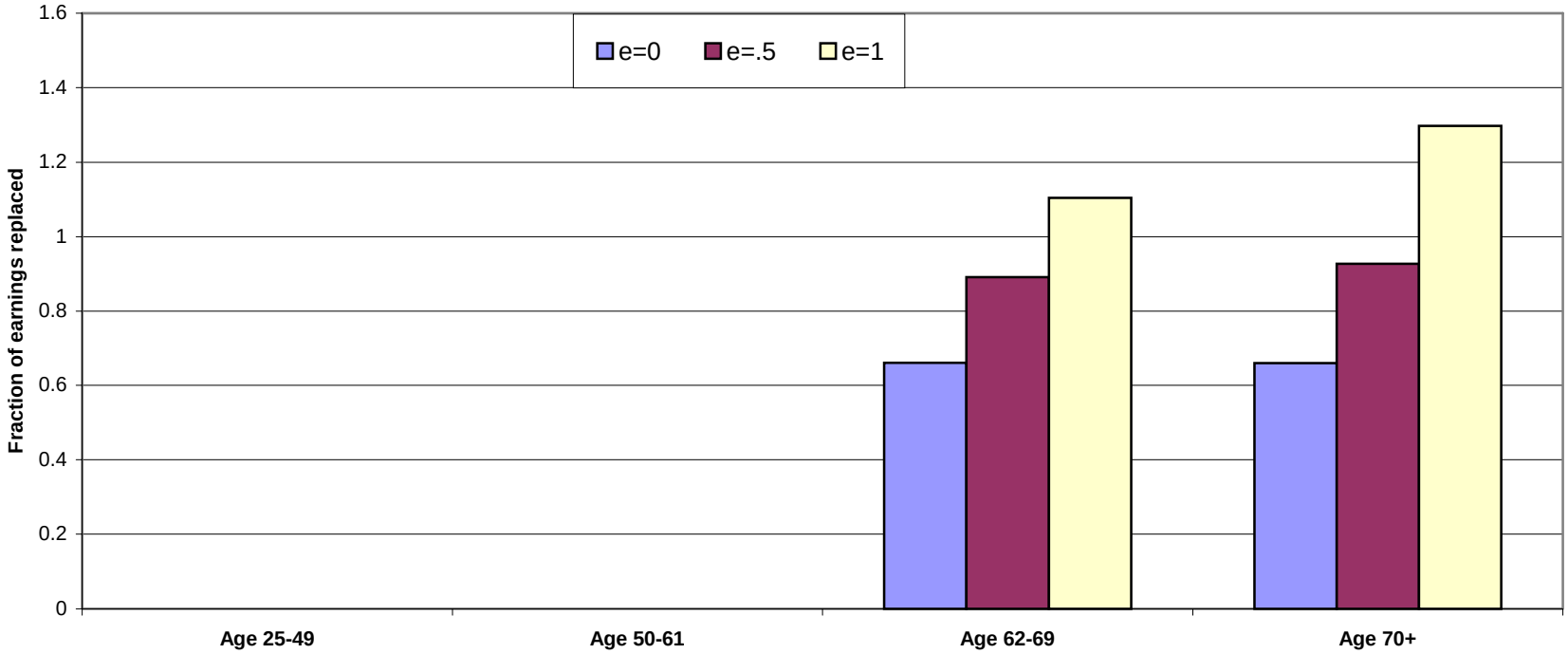
Source: authors' calculations based on PSID 1977-1993
Replacement rate defined as size-adjusted net-of-tax household income in year t+1 divided by size-adjusted net-of-tax household income in year t-1

Figure 2A. Median Widow's Social Security Replacement Rate by Husband's Age at Death and Household Equivalence Scale.



Source: authors' calculations based on PSID 1977-1993
Replacement rate defined as size-adjusted household social security income in year t+1 divided by size-adjusted household social security income plus labor earnings of deceased in year t-1

Figure 3. Median Survivor's Social Security Replacement Rage by Age at Death of Head or Spouse and Household Equivalence Scale.



Source: authors' calculations based on PSID 1977-1993
Replacement rate defined as size-adjusted household social security income in year t+1 divided by size-adjusted household social security income plus labor earnings of deceased in year t-1

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.

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

	Age 25 through 49			Age 50 through 61			Age 62 and over		
Country	**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.

Table 2A. Widow's Household In come and its Sources Before and After Husband's Death (1996 dollars)

			Aged 25-49			
Income Source	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	65302	59811	60738	24014	23470	22729
Survivor's Labor Income	17303	15096	15294	20152	17677	16614
Deceased's Labor Income	45309	40648	41312	0	0	0
Others' Labor Income	2691	4067	4132	3862	5793	6114
Private Transfers	81	2562	84	7	0	106
Private Pensions	0	0	0	637	0	1089
Imputed Rents	4639	5163	3720	5308	4413	4255
Assets	5781	3656	2294	10386	14214	12904
Public Sources						
Transfers	230	204	1050	115	30	0
Social Security	1174	1164	1272	5049	4436	2641
Taxes	18694	15824	16105	6357	8057	6950
Net-of-tax Household Income	58511	56737	53053	31219	35455	33996

			Aged 50-61			
Income Source	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	55474	57440	55319	22144	21273	21406
Survivor's Labor Income	14405	13600	14466	13870	14649	15304
Deceased's Labor Income	31867	32565	31424	0	0	0
Others' Labor Income	9202	11275	9429	8274	6624	6103
Private Transfers	302	245	13	29	413	171
Private Pensions	4674	4055	4470	5666	4985	5145
Imputed Rents	4866	4925	4386	4523	4540	4473
Assets	5441	4640	4129	7357	12760	4333
Public Sources						
Transfers	577	1117	581	299	473	410
Social Security	2282	2396	2955	2487	2943	2495
Taxes	15714	15936	15943	7313	8454	5998
Net-of-tax Household Income	57902	58883	55910	34544	38893	32409

			Aged 62-69			
Income Source	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	33393	29549	23121	9271	8427	8689
Survivor's Labor Income	10435	9177	8729	4779	4566	5228
Deceased's Labor Income	20302	17483	11435	0	0	0
Others' Labor Income	2656	2889	2957	4492	3861	3462
Private Transfers	4	101	-232	111	41	135
Private Pensions	4912	4733	9368	6320	4774	5794

Imputed Rents	4952	5000	4872	5583	5156	5785
Assets	3277	3135	4482	3942	6370	6746
Public Sources						
Transfers	436	406	291	464	320	283
Social Security	6080	7482	10291	7598	8133	8207
Taxes	9630	8672	8204	3305	3168	4345
Net-of-tax Household Income	43230	41678	43989	29957	28548	25891

			Aged 70+			
Income Source	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	12365	10513	4312	2253	6116	1807
Survivor's Labor Income	1197	1057	1222	854	703	457
Deceased's Labor Income	3688	2104	987	0	0	0
Others' Labor Income	7481	7352	2103	1399	5413	1350
Private Transfers	205	88	141	89	248	83
Private Pensions	4782	5024	4596	1609	2083	1870
Imputed Rents	4593	4654	4342	3229	3227	3391
Assets	16212	15686	12005	7276	12302	9655
Public Sources						
Transfers	121	144	148	146	369	101
Social Security	13368	13285	13248	8370	8592	8617
Taxes	6449	5082	3026	1395	3507	1897
Net-of-tax Household Income	44929	44314	35766	20425	27578	19873

Source: authors' calculations from the Panel Study of Income Dynamics 1976-1993
Notes:
1. 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 27-48, 47-84, 46-95, 77-183.
2. A detailed list of the income types included in each category is in the appendix.

Table 3. Survivor' Mean Household Income and its Sources Before and After Death of Household Head Spouse (1996 dollars)

			Aged 25-49			
Income Source	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	60431	62754	61443	42907	43738	33912
Survivor's Labor Income	29291	31063	30210	34315	33495	24050
Deceased's Labor Income	29553	28384	27399	0	0	0
Others' Labor Income	1587	3307	3835	8592	10242	9862
Private Transfers	128	1736	486	306	258	45
Private Pensions	160	394	141	359	517	462
Imputed Rents	4292	4118	3895	5980	4638	4089
Assets	3108	2160	1672	4767	7055	6464
Public Sources						
Transfers	119	155	525	54	68	203
Social Security	3678	3600	2960	4844	4411	3244
Taxes	17928	16912	16250	12349	13478	9172
Net-of-tax Household Income	53073	58004	54873	44219	46872	38760

			Aged 50-61			
Income Source	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	53800	50470	48507	27236	26614	25868
Survivor's Labor Income	21821	16874	17202	16388	19368	18039
Deceased's Labor Income	23179	23927	23148	0	0	0
Others' Labor Income	8799	9668	8157	10848	7247	7829
Private Transfers	235	299	38	363	323	133
Private Pensions	3633	4040	4526	4995	4384	5271
Imputed Rents	4721	4699	4319	4440	4455	4433
Assets	4655	4172	3466	10139	11537	6215
Public Sources						
Transfers	750	989	633	268	510	354
Social Security	1827	2074	2615	3299	3544	3606
Taxes	14839	13638	13514	9278	10177	8184
Net-of-tax Household Income	54781	53106	50591	40763	40477	37065

			Aged 62-69			
Income Source	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	27402	23038	20635	9977	8951	8034

Survivor's Labor Income	9866	7886	8618	4792	4550	4573
Deceased's Labor Income	14699	12510	9166	0	0	0
Others' Labor Income	2837	2642	2850	5185	4401	3461
Private Transfers	10	165	-157	79	32	92
Private Pensions	5992	5210	8335	5524	4761	5168
Imputed Rents	5511	5462	5350	5394	5018	5526
Assets	3470	3397	4314	5071	6012	7117
Public Sources						
Transfers	423	317	289	354	239	215
Social Security	6989	8606	10653	8184	8661	8890
Taxes	7784	6523	7258	3141	3497	3884
Net-of-tax Household Income	41818	39621	42160	31422	28111	26394

Aged 70+

Income Source	t-3	t-2	t-1	t+1	t+2	t+3
Private Sources						
Total Household Labor Income	10874	9132	3988	1997	5243	1788
Survivor's Labor Income	1653	1294	1074	705	758	359
Deceased's Labor Income	2843	1654	767	0	0	0
Others' Labor Income	6378	6184	2147	1291	4485	1430
Private Transfers	179	75	116	70	211	77
Private Pensions	4597	4546	4198	2010	2574	2219
Imputed Rents	4497	4372	4169	3426	3239	3534
Assets	13478	13704	11094	7348	11176	9818
Public Sources						
Transfers	242	224	147	123	298	193
Social Security	13407	13369	13291	8477	8360	8519
Taxes	5268	4275	2724	1412	3236	1885
Net-of-tax Household Income	41814	41147	34278	20143	24643	19244

Source: authors' calculations from the Panel Study of Income Dynamics 1976-1993
Notes:
1. 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 52-81, 82-121, 77-131, 119-234.
2. A detailed list of the income types included in each category is in the appendix.

Table 3 A. Widow's Mean Net-of-Tax Household Size-Adjusted Income Before and After Husband's Death by Various Returns-to-Scale Values (1996)

	Aged 25-49		**Aged 50-61**		**Aged 62-69**		**Aged 70+**	
Equivalence Scale Value	t-1	t+1	t-1	t+1	t-1	t+1	t-1	t+1
e=0	53053	31219	55910	34544	43989	29957	35766	20425
e=.5	30644	23445	34253	27764	29532	27558	24898	19332
e=1	18115	18855	21784	23663	20019	25884	17396	18639
Family size	3.3	2.1	3.0	1.7	2.3	1.3	2.1	1.2

Source: authors' calculations from the Panel Study of Income Dynamics 1976-1993
Notes: This is an unbalanced panel. Sample size varies across years.

Table 4. Survivor's Mean Net-of Tax Household Size-Adjusted Income Before and After Death of a Household Head or Spouse, by Various Returns-to-Scale Values (1996 dollars)

	Aged 25-49		**Aged 50-61**		**Aged 62-69**		**Aged 70+**	
Equivalence Scale Values	t-1	t+1	t-1	t+1	t-1	t+1	t-1	t+1
e=0	54873	44219	50591	40763	42160	31422	34278	20143
e=.5	30936	33098	31143	34407	28557	29210	23773	19214
e=1	17868	26161	19816	30469	19504	27703	16571	18627
Family size	3.4	2.1	2.9	1.6	2.3	1.3	2.1	1.2

Source: authors' calculations from the Panel Study of Income Dynamics 1976-1993
Notes: This is an unbalanced panel. Sample size varies across ye

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				
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.