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## **The Pattern and Consequence of Survivorship Provisions in Public Retirement Plans: Comparison of Britain, U.S. and Germany**

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\* The Charts and Tables referred to in the text can be found in the accompanying links.

## **Abstract**

The economic consequences of reform of social retirement systems for women—who are more likely to receive family benefits from social old-age insurance programs—and particularly for widows, have been a major focus of public policy discussions. As work careers for women have lengthened, some question the need for family benefits, originally designed to protect non-working spouses against the income consequences of a working spouse's retirement or death. Others argue that a continuing pattern of unequal division of paid work responsibilities between spouses and myopic decisions about the allocation of retirement resources over the lifetimes of both spouses indicate an ongoing need for survivor benefits.

A Gerontological Society of America Task Force on Women concluded that "future low-income elderly women will be no better off than are today's lower income older women," (Smeeding, Estes and Glasse, 1999). The Task Force recommended more research on ways to improve the economic position of survivors. This paper builds on this recommendation by comparing the income consequences of a husband's death in three countries.

The study examines how income sources change when married women in Britain, the U.S. and Germany are widowed, and it draws inferences about the income consequences of specific retirement and survivorship provisions. The data come from the Cross-National Equivalent File, which includes data from the German Socio-Economic Panel (1984–1997), the U.S. Panel Survey of Income Dynamics (1980–1997) and the British Household Panel Survey (1991–1998).

## **Introduction**

The Social Security reform debate is vocal and active across developed countries as each discusses the consequences of an aging population for the nation's ability to continue current support provisions. This debate can be viewed as part of a long-standing discussion about the appropriate role of the welfare state in assuring a minimum level of social and economic equality (Palme 1989). A central issue in the current debate is whether the changing work roles of women and their greater ability to insure themselves against income loss due to their own retirement and widowhood alter the importance of survivor benefits to their later economic well being. .

Proposals of more privatized Social Security systems are feared by some to increase the economic vulnerability of individuals to whom events might happen unexpectedly early, before adequate funds can be accumulated. It is argued that despite lengthening work careers, women continue to reduce work and earnings for child rearing and couples may continue to underestimate the length of widowhood and consumption needs at that time.

The inability of policy makers to come to consensus about the importance of public efforts in maintaining the economic security of widows is an indication in part of the absence of firm knowledge both about the economic consequences of widowhood and about the different outcomes for widows under various insurance systems. Widows, of course, are such because of husbands' deaths. But for some, widowhood may be of greater economic consequence because of early death of an inadequately insured working husband, of the failure of a pension plan to pay expected benefits, or of the couple's myopic estimates of future economic risks and consumption needs.

It may also be that widows fare quite differently under different national Social Security systems. In systems that offer guaranteed benefits (demogrants), survivors are assured against falling below a given income, but the decline in economic resources has a large variation. Voluntary, individual financial decisions can move families above the demogrant and lessen income declines. Alternatively, society may offer pay survivor benefits that are tied to the income actually lost. Such earnings-related benefits smooth out income falls, but unless tied to a guarantee, they may leave low earners with inadequate levels of income.

The literature that shows differences in average income levels between elderly, unmarried women and married couples suggests that even in countries in which social welfare is more generous, widows are not entirely protected against income falls. At the same time, variations across countries suggest that how widowhood is insured makes a difference to relative well-being. The larger difference in the U.S. than in other developed countries between poverty rates for, unmarried and married women suggests that the U.S. earnings-related approach to social insurance leaves women particularly vulnerable to economic decline when their husbands die.

A seminar sponsored by the Urban Institute and the Gerontology Institute at the University of Massachusetts–Boston concluded that current U.S. Social Security rules could exacerbate this difference among future cohorts of retiring women, even though they would have had longer covered work histories

(Stanfield, 2000). In their 1999 report to the Social Security Advisory Board, the Technical Panel of Assumptions and Methods also feared that "under some reasonable assumptions...the number of poor and near-poor older women could increase substantially in the future," (Social Security Advisory Board, 1999, p. 25). A Gerontological Society of America Task Force on Women concluded, "future low-income elderly women will be no better off than are today's lower income older women." (Smeeding, Estes, and Glasse, 1999). The Task Force recommended more research on ways to improve the economic position of survivors.

This paper builds on this recommendation by examining how three countries' social security systems treat survivors and what difference this makes to changes in income as women move from marriage to widowhood. This paper compares the economic well-being of widows under these three national systems and draws inferences about the consequences of variations in benefit provisions for the economic well-being of survivors of deceased workers.

## **Background**

Cross-national studies that have examined the relative well-being of unmarried, older women (Bradshaw and Chen, 1996; Shaver, 1996; Siegenthaler, 1996; Stapf, 1994) have shown that non-married, older women (who are primarily widows) are worse off than are married couples of like age. In 1997, 25.5% of U.S. women 65 and older living alone were poor, using a 40 percent median income measure of poverty, compared to 12 percent of families headed by a person 65 and older (Smeeding, 2001). The comparable percentages for the U.K. in 1995 were 9.7 and 4.0 percent and for Western Germany: 10.1 and 4.0. Our own cross-sectional estimates using data from the Luxemburg Income Study (LIS) and distinguishing between married and widowed women, show similar percentage differences (Table 1). The consistency across countries of higher poverty incidence of widowed compared to married women yet with variation in that difference across nations has been assumed to reflect differences across systems in social insurance provisions against old age contingencies.

Table 1

**Poverty Rates of Married and Widowed Females 60+: Weighted**

<u>Country &amp; Year</u>	<u>60+</u>		<u>Ratio of Widowed to Married Poverty</u>
	<u>Widowed</u>	<u>Married</u>	
<u>Germany</u>			
1989	3.6	9.8	2.7
1994	0.8	3.2	4.2
<u>United Kingdom</u>			
1991	12.1	14.9	1.2
1995	6.7	6.5	1.0
<u>United States</u>			
1991	10.7	22.1	2.1
1994	9.5	20.4	2.1
1997	11.6	23.3	2.0

*Source:* Authors' calculations using Luxembourg Income Study data.

Cross-sectional data provide information only on the characteristics of individuals at a moment in time. They do not reveal how individuals achieved currently observed states. Substantially lower incomes of widowed than married women in the cross-section may be taken as evidence that widowhood causes income falls. However, widows interviewed in a single survey will include both women who were widowed many years earlier, when economic conditions and income policies may have been less protective of widows, as well as those more recently widowed and subject to current policies and economic conditions.

Further, given the association between death and both age and economic status, widows certainly are drawn from those who marry older men and probably from couples who were less well-off even prior to widowhood. Thus, in cross-sectional data one cannot distinguish between differences caused by long standing pre-widowhood factors that may themselves be associated with a greater risk of widowhood, and changes that take place upon widowhood. Only from data that follow individuals over time can we discover the magnitude and components of the changes in well-being associated with widowhood.

A longitudinal picture emerges from studies of widowhood in the U.S. during the 1970s and early 1980s. It shows that the lower average income of widows than married couples can be attributed partially to differences in income that existed even before any of the husbands died. Nevertheless, widowhood itself has a large, negative impact on the economic well-being of women widowed during those decades (Bound et al., 1991; Burkhauser, Holden, and Feaster, 1988; Holden and Zick, 1998b; Hurd and Wise, 1989).

This paper compares the impact of widowhood in three countries: the U.S., U.K. and Western Germany. The issue that this research attempts to address is this: Do the different approaches each nation takes to social insurance make a difference to the income of women as they are widowed?

### **Survivor Benefits: Differences Across Countries**

The three countries provide insurance against the income consequences of a spouse's death through different means. They differ in the degree to which additional benefits are obtained when a spouse dies, their offsets against the survivor's own benefits, and the ability to combine earnings with benefit receipt. Theoretically, these different approaches to social insurance should lead to different outcomes when a spouse dies. Table 2 lays out key differences in these systems.

**Table 2**

**Comparison of Retirement and Survivor Benefits  
Germany, U.K., U.S.**

<u>Germany</u>	<u>U.K.</u>	<u>U.S.</u>
<u>Retirement Benefits</u>	<u>Retirement Benefits</u>	<u>Retirement Benefits</u>
Strictly earnings related [credits = sum( wages/ave)]	Basic Benefit Payable 65 (60 women)	Progressive earning related benefit formula Payable women and men at age 62 Reduced if first received age 62- 64
Payable 65 (62 for women)	Plus SERPS	
<u>Widow Benefit</u>	<u>Widow Benefit</u>	<u>Widow Benefit</u>
3 months at 100% Age 45+ at 60% <45 25%	Highest of own or husband's Basic Benefit  (Payable age 55) 100% of husband's SERPS (Full amount paid if husband 65+, Age reduction for younger ages)	Age 65+ at 100% of husband's retired-worker benefit Reduced if first received age 60- 64
<u>Offsets</u>	<u>Offsets</u>	<u>Offsets</u>
Set income over limit: Benefit reduced by 40%	No income test	Full offset against own benefits Earnings test offset against earnings During data period for earnings: below 70 (earliest years 72); now below age 65

**Germany:** Shaver (1996) characterizes Germany's social insurance system as one based on a "social market economy" model in which the state aims to ensure a decent standard of living but has no responsibility for promoting equality. The several layers of support include compulsory social insurance, plus occupational funds that cover particular groups of workers. Statutory old age pension benefits are strictly earnings-related, based on a ratio that measures the person's lifetime earnings relative to those of the average worker. There are some credits for periods out of the workforce due to unemployment, sickness and raising children.

Nevertheless, the relative strictness of the lifetime benefit formula means that years out of the work force will lower relative earnings (and benefits), even if earnings while working are high. Benefits are payable at age 65, with long-service workers eligible at 63 and some women, under special circumstances, at age 62.

During the first three months of widowhood, women receive 100% of the insured spouse's pension. Thereafter, she receives 60% if age 45 or older, disabled or caring for at least one child. Otherwise, only 25% of the insured spouse's pension amount is paid. These benefits are generally not taxed but may be offset by other income including that from earnings, investments, rentals or their own worker pensions.

When the additional income exceeds a limit (equal to about one-third of the maximum benefit), benefits are reduced by 40% of the excess amount. Although benefits are lost at the same *rate* for all with other income above the limit, persons with lower benefits will suffer a larger *percentage* loss in benefits. For these, means-tested benefits provide a minimum guarantee.

**Britain:** The British National Insurance system provides a flat-rate benefit (the Basic Pension), a supplementary earnings-related insurance program (the State Earnings Related Pension Scheme, or SERPS), and means-tested benefits. Although the Welfare Reform Act of 1999 made major changes in the earnings-related system, this paper focuses on the pre-1999 Act system. Widowed mothers' benefits are paid until the youngest child reaches age 16 (or 19 if a full-time student). Widows without children, who are age 45 and over, receive an age-graded share of the basic pension, and at 55, they receive the full grant.



Widows are eligible only for the higher Basic Pension benefit: their own or their husbands'. Widows receive a benefit based on their husbands' SERPS account with widows of men who would have reached pensionable age before October 2002 (age 65), receiving up to 100 percent of his SERPS benefit. That percentage is scheduled to decline gradually to a maximum of 50 percent of their husbands' SERP by October 2010. Widows' benefits are not reduced by earnings or other income, although a fairly large delayed retirement credit is designed to encourage later receipt.

**U.S.:** These systems share some common features with the U.S, most notably that they all have an earnings-related benefit formula. Yet, the U.S. benefit formula is more strongly redistributive, replacing a higher percentage of the wages of lower earners, but without a flat-rate benefit as in Britain. Widows may receive benefits either because an eligible child (under age 16) of the deceased is in their care, or because they are age-eligible (60 or older if not disabled).

At age 65 a widow is eligible for a benefit equal to that of her deceased husband's. However, she is eligible only to receive the higher of the benefits for which she may be eligible, hers or his. If under the age of full benefit eligibility she may have her benefits reduced because of covered earnings but no other income source counts against benefit receipt.

**Summary:** All three countries provide widows some form of survivor benefits based on a husband's contribution or benefit amount. However, the share of a husband's benefits inherited, offsets for other income, age of benefit receipt, and the existence of minimum guaranteed benefits vary across these three countries. We explore whether this makes a difference to the average changes in income as women are widowed.

## Data

The data we use come from the Cross-National Equivalent File (CNEF). The CNEF contains longitudinal files for the Panel Study of Income Dynamics (PSID) for 1980–1997, data from the German Socio-Economic Panel (GSOEP) for 1984–1997, and the 1990–1998 waves of the British Household Panel Study (BHPS). To conform with the GSOEP we use data from the PSID for the same 1984–1997 period.

The GSOEP is a survey, initially of more than 6,600 households (containing more than 12,700 individuals) interviewed each year beginning in 1984. In 1990 additional households were added from the GDR. The BHPS is a representative sample of the population of Great Britain living in private households. It first interviewed about 5,500 households (including 10,000 persons), first in 1991 and each year thereafter. The Panel Study of Income Dynamics (PSID) is a longitudinal study of a representative sample of U.S. individuals (men, women and children) and the families in which they reside. Individuals have been interviewed annually—biennially since 1997—regardless of whether they continue to live with the original households. Begun with 4,800 families in 1968, the sample has expanded to more than 62,000 individuals over the 34 years of interviews.

**Sample:** This paper focuses on women who were married and become widowed during the course of the longitudinal study. They are labeled "eventual widows". For each sample, women were identified who were married in the initial year of the survey and were observed at least in one survey as a widow. Initially, all women who became widows were counted, regardless of when they entered the sample. The vast majority were there in the 1984 PSID and in the first year of the GSOEP (1984) and the BHPS (1991) CNEF, so only their presence was required in the survey (and married) in that first year.<sup>1</sup> Table 3 shows widows by the year in which they were first widowed.

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<sup>1</sup> In Germany three women who entered the survey from 1985–87 were subsequently widowed, 59 eventual widows entered in 1990, the year an East German sample was added, and another 9 eventually widowed women (including in East Germany) entered the sample after 1991. Twelve eventual widows entered the PSID after 1984. None entered the BHPS.

**Table 3**  
**Timing of Widowhood in the CNEF**

<b><u>Year First Widowed</u></b>	<b><u>Germany</u></b>	<b><u>Britain</u></b>	<b><u>USA</u></b>
1984-1985	22		31
1985-1986	22		25
1986-1987	22		33
1987-1988	22		33
1988-1989	24		21
1989-1990	18		22
1990-1991	26		28
1991-1992	20	23	29
1992-1993	21	33	28
1993-1994	22	28	31
1994-1995	23	29	22
1995-1996	12	21	28
1996-1997	12	22	20
1997-1998			
<b>Total</b>	<b>266</b>	<b>156</b>	<b>351</b>

Note: All women were married and in the sample in 1984 for the GSOEP and PSID and 1991 for the BHPS.

**Table 4**  
**Example of Conversion to Widowhood Years**  
**(Using BHPS Survey Years)**

<b>Interview Year</b>	<b><u>Calendar Year Status</u></b>		<b><u>Widowhood Period</u></b>	
	<b>Person 1</b>	<b>Person 2</b>	<b>Person 1</b>	<b>Person 2</b>
1991	married	married	b1	b5
1992	widowed	married	p0	b4
1993	widowed	married	p1	b3
1994	widowed	married	p2	b2
1995	widowed	married	p3	b1
1996	widowed	widowed	p4	p0
1997	widowed	widowed	p5	p1

**Table 5**  
**Adjusted Widowhood Period**  
**(Number of Widows by Period)**

<b>Year First Widowed</b>	<b>GSOEP</b>	<b>BHPS</b>	<b><u>PSID</u></b>
b10	67		101
b9	90		126
b8	109		154
b7	136		182
b6	154		202
b5	178	43	223
b4	199	71	256
b3	221	98	289
b2	240	131	316
b1	266	156	351
b2	240	131	316
b1	266	156	351
p	266	156	351
p1	240	126	316
p2	221	98	276
p3	190	72	246
p4	161	45	210
p5	132	16	183
p6	114		154
p7	92		129

Because this paper is interested in transitions to widowhood, observations were organized by pre- and post- widowhood years (Table 4). That is, everyone is observed for at least one pre-widowhood period (identified as b1) and as a widow (identified as p0). The full sample is present in both of those periods. Women are observed for different periods of pre- and post-widowhood, and the total length of time is longer than the number of interview years.

Consider, for example, two women who were interviewed in the 1991 BHPS when married and continued to be interviewed each year through 1997 (Table 4). Assume one was widowed between the 1991 and 1992 interviews, and the other between the 1995 and 1996 interviews. The first would be observed for periods b1, p0 and p1–p5. The second would be observed for b5–b1, p0 and p1.

Thus, for these two women interviewed in 7 years, there are a total of 11 widowhood observations.

It is this arrangement of the data that makes it possible to aggregate observations and track changes in income as women approach widowhood and live as widows. Although there are many more periods of widowhood for the longer German and U.S. panels, the shorter BHPS panel limits analysis to the five pre- and post-periods for each country (Table 5).

The presentation of data in this way requires price adjustments and a decision on weighting. All income data are price adjusted: BHPS data, to the base year 1995, and GSOEP and PSID, to the base year 1991. Because absolute levels of well-being are not being compared, rather, changes in each country over time, the differences in base years do not affect the conclusions.

Data are weighted by individual weights in the first year of the survey. As described in the CNEF documentation, individual weights compensate for unequal probabilities of selection and sample attrition. The analysis sample is representative of women who were widowed over the years of the panels. Because women who are widowed but do not remain in the panel present legitimate observations on the consequences of widowhood, longitudinal weights are not used. This is because these are non-zero only for those individuals who have been panel members and answered surveys in all waves.

**SEE CHART 1**

**Income change:** Chart 1 presents mean income for BHPS eventual widows. Data are adjusted for price changes, but not for household size. Categories of income are those in the CNEF. All observations are centered on b0, the first interview in which each woman is observed as a widow. The decline in income is obvious in this chart. Total post-government income declines by 36%, slightly less than the 43% decline in average pre-government income. Interesting is the relative stability of income pre- and post-widowhood.

Income is stable as husbands approach death, in part because public transfers rise as labor earnings fall. The death of the husband brings a sharp fall in labor earnings, as well as in Social Security payments, public transfer and asset income, offset slightly by a rise in private transfers.

### SEE CHARTS 2 and 3

Similar patterns are observed across the three countries. Later in the paper, particular sources of change are discussed, but here, note the relative stability in income pre- and post-widowhood and the fall upon the husbands' deaths.

Chart 2 compares mean incomes (Chart 3 compares median income) for the three countries, but scales income in the b1 period to be equal. This is for visual comparison and does not imply identical levels of income in the three countries. What is evident in this chart is not only the relative stability pre- and post-widowhood in the three countries but the comparable decline in income from the last pre-widowhood year (b1) to the first full period of widowhood (p1). The median changes shown in Chart 3 are consistent with mean observations.

The U.S. data diverges from the other two countries for the b0 period. This is due to a peak in both mean and median private transfers for widows in this period, likely due to insurance and pension settlements. This increase contrasts with the trough in income for this period in Germany and Britain. While this could be due to delays from a more public support system settling benefit accounts, it may also be due to the problem described in Burkhauser, Holden, and Meyers (1986), of asking current widows about income in a reference period during which some income was received by the then-still-alive husband.

For these two reasons—survey procedures and insurance payment timing differences—this first survey year when women report being a widow is ignored. The analysis concentrates on changes in income from the period just before widowhood (b1) to the interview for which the income reference period represented a full period of widowhood, which is p1.

## **Needs-Adjusted Income Changes**

Income declines are not a concern if the economic resources of the survivor are diminished no more than proportionately by the decline in consumption requirements due to the death of one person. In this case, if the income of the newly widowed household were equivalent to that of the household when the woman was married, her economic well-being would be judged as unchanged. The appropriate adjustment for the different consumption needs of households remains an unresolved issue in the economics literature.

Table 6 compares how mean and median income changes using three different equivalency scales to adjust for changes in household size between the b1 and p1 periods. The OECD scale gives each adult beyond the first (who counts as one person) a weight of .7 and each child (under 18) a weight of .5. The U.S. equivalency scale is that used in the setting of poverty levels in the U.S. and assumes greater economies of scale as household size increases.

The third is based on a scale developed in Buhmann et al. (1988) and adopted in several recent studies on income inequality and poverty (e.g., Hagenaars et al. 1994). The scale, labeled here the "international scale", is equal to disposable household income divided by household size raised to a power ( $e$ ), which represents the elasticity of the scale rate with respect to household size. The value  $e = .5$  is adopted in most international comparisons, and is used here.



**Table 6**  
**Comparison of Equivalency Scale Effects:**  
**Income Changes Upon Widowhood**

**I. Hypothetical Income Change**

	<u>Prewidow Income</u>	<u>Widow Income</u>	<u>% Change</u>
Total	30000	20000	-33.3%
Per Capita	15000	20000	33.3%

**II. Equivalence Scale Adjusted Hypothetical Income Change**

	Using U.S. Scale			Using OECD Scale			Using International Scale		
	Prewidow Income	Widow Income	% Change	Prewidow Income	Widow Income	% Change	Prewidow Income	Widow Income	%
Size Change Change									
2 to 1	23438	20000	-14.7%	17647	20000	13.3%	21213	20000	-5.7
3 to 2	19108	15625	-18.2%	12500	11765	-5.9%	17321	14142	-18.4
4 to 3	14925	12739	-14.6%	9677	8333	-13.9%	15000	11547	-23.0
5 to 4	12605	9950	-21.1%	7895	6452	-18.3%	13416	10000	-25.5
6 to 3	11194	8403	-24.9%	6667	5263	-21.1%	12247	8944	-27.0
3 to 1	19108	20000	4.7%	12500	20000	60.0%	17321	20000	15.5
4 to 2	14925	15625	4.7%	9677	11765	21.6%	15000	14142	-5.7

Note: With U.S. scale: persons are BETTER off; become MORE worse off; differences between size changes are SMALLER. With OECD scale: persons are WORSE off; become LESS worse off ; differences between size changes are LARGER.

The scales would lead to quite different conclusions about the relative well-being of households of different sizes. Using the U.S. poverty scale, the second person and third adult are each assumed to raise consumption needs by approximately 28%. In this scale, a three-adult household requires 1.57 of the income of a one-person household compared to the OECD's scale of 1.5 required for a household with one adult and one child, or 1.7 for a household with two adults and the third scale's 1.73 times income requirement for three adults.

Compared to a scale that assumes greater economies of scale as household size increases, a scale that assumes smaller economies of scale will result in larger falls in well-being as household size increases, holding income constant (Table 6). Thus smaller economies of scale will require larger income increases to maintain equivalent levels of consumption as household size increases.

In considering the well-being of widows under different equivalence scales, there are two effects. For a given income, the equivalency standard that assumes the larger economies of scale (e.g., the U.S. poverty standards) will register greater *levels* of well-being in the pre-widowhood period (when at least two adults reside in the household) than will the standard with smaller economies of scale (e.g., the OECD scale). However, using a standard with larger economies of scale will result in larger *declines* in equivalent well-being when one adult leaves the household.

Consider first the example of a household that received \$30,000 until after the husband's death, when the widow received 33 percent less. Use of the OECD scale with its smaller assumed economies of scale lowers the level of economic well-being of the couple household by more compared to a simple household income measure than does the use of the U.S. equivalence scale. The international scale is between these two equivalent measures. However, use of the OECD equivalence scale makes it appear as if the economic well-being of the widow improved after the husband's death (by 13%). Her well-being would have declined using the U.S. equivalence scale (by 15%) and the international scale (by 6%).

The largest difference in the use of these two scales is when a husband dies in a two-person household, which is the median household change in all three countries. Additional persons in the household in the pre-widowhood period reduce economic well-being by a proportion that depends on the equivalency scale used, but the change in well-being upon a decline by one adult for larger households is quite comparable as household size increases.

At the same time, should small households (of one or two persons) be the result of size falls from quite large households (for example if a child goes off to college after a husband dies), the OECD scale registers a very large improvement in well-being relative to the U.S. scale. Again the international scale is intermediate.

Thus the particular equivalency scale chosen makes an enormous difference to what is concluded about the economic fortunes of women when husbands die. Beyond the change when household size falls from two to one, the two equivalency scales are more comparable in registering relative income changes. Most widows, however, do come from two-person and three-person households.

**Table 7**  
**Changes in Post-Government Income**  
**Using Three Equivalency Scales**

Period	<u>BHPS</u>		<u>PSID</u>		<u>GSOEP</u>	
	Mean	Median	Mean	Median	Mean	Median
	<u>Widowhood</u> <u>Total Income</u>					
b1	15989	13175	42017	27405	41291	35916
p1	11431	9066	28843	17445	31278	25322
% Change	-28.5%	-31.2%	-31.4%	-36.3%	-24.2%	-29.5%
	<u>Household Size Adjusted Income</u> <u>Using OECD Equivalence Weights</u>					
b1	8543	7228	27939	18815	26949	24282
p1	9730	7920	25936	14004	26582	22678
% Change	13.9%	9.6%	-7.2%	-25.6%	-1.4%	-6.6%
	<u>Using General Official U.S. Equivalence Weight</u>					
b1	11532	9946	28817	20544	28984	26044
p1	10396	8714	26352	15205	27296	23246
% Change	-9.8%	-12.4%	-8.6%	-26.0%	-5.8%	-10.7%
	<u>International Equivalence Scale</u>					
b1	10583	9002	26384	18759	26652	24253
p1	10170	8612	25921	14883	26555	22610
% Change	-3.9%	-4.3%	-1.8%	-20.7%	-0.4%	-6.8%

Note: BHPS data are in price adjusted British pounds, PSID data in price adjusted U.S. dollars, GSOEP data in price adjusted Marks.

Table 7 shows the change in mean and median post-government income using these three equivalency scales. Consistent with the hypothetical example, households are absolutely worst off using the OECD equivalence scale and the average declines in income are smaller, particularly compared to use of the U.S. scale. Despite quite comparable percentage changes in non-size adjusted household income, mean household-size adjusted income actually increases for British widows. The explanation appears to lie in the higher percentage of British widows who live in households that change from two- to one-person (plus three- to two-person) households upon the husbands' deaths.

This is the range of household size change in which the equivalence scales register the greatest difference. In the U.S. only 59 percent of these households were in this range (68 percent adding three to two-person households) compared to 77 percent in Britain (87 percent) and 68 percent in Germany (81 percent). The consequence, as shown in Table 6, is the more positive (or smaller declines) in the income of British widows using the OECD scale.

The OECD equivalence scale was used in this study in part because it makes it possible to compare these results with earlier studies. In addition, the OECD scale is a more widely accepted measure of well-being, in part because of its more uniform treatment of additional adults and children, in contrast to the non-uniform increments in consumption needs as adults and children are added to the U.S. equivalently-scaled household. This, of course, results in British widows appearing to suffer less economically upon the death of their husbands than would be the case using the other two scales.

#### **SEE CHARTS 4 and 5**

In Charts 4 and 5 pre-widowhood and post-widowhood mean and median OECD scale adjusted incomes of eventual widows are plotted. While the data are in each nation's currency (but price adjusted), again each country's values are scaled so they are equal (at the PSID amount) in the b1 year.

The reasons for ignoring the year in which widowhood occurs is confirmed here; divergence in changes in that year are probably due more to the timing of countries' insurance distributions than to fundamental differences in income changes. That widows in Britain are better off relative to the pre-widowhood year in the first post-widowhood year is shown here. The stability in mean income in the pre- and post-widowhood years is evident, although the

medians show greater declines for the PSID and increases for the BHPS samples from the b1 to p1 periods.

## **Sources of Income Change**

As a first step in understanding why these similarities arise when the three country systems are so different, Table 8 presents distribution of income by source in b1 and p1 and the contribution of each source to the change. Excluded from this table are net taxes and the impute value of owner-occupied housing. Differences in systems (and in survey classification of income) are evident in differences across countries in the contribution of each source to total post-government income, shown in the first panel of the table.

In the second panel of the table, there is the percentage by which the mean pre-widowhood OECD adjusted income would have declined had this source alone changed as it did while neither household size nor other sources did. For example, in Britain, had labor income alone declined, all other sources and household size remaining the same, the observed pre-widowhood income would have declined on average by 25.8 percent.

**Table 8**  
**Contribution to Post-Government Income and Change**  
**in Income by Each Source**

	<b>Labor Income</b>	<b>Private Transfers</b>	<b>Asset Income</b>	<b>Social Security</b>	<b>Public Transfers</b>
<b>Income Sources</b>					
DISTRIBUTION					
<u>Of Income</u>					
<u>BHPS</u>					
b1	30.5%	0.3%	10.9%	27.8%	35.7%
p1	21.3	0.4	7.6	30.3	35.1
<u>PSID</u>					
b1	38.3	11.7	17.0	17.4	0.8
p1	22.2	5.8	18.2	21.6	1.2
<u>GSOEP</u>					
b1	43.9	0.1	4.1	54.2	1.6
p1	31.6	0.6	6.2	58.0	2.4
<u>Of Income Change</u>					
BHPS	-25.8%	0.0%	-10.2%	-12.9%	-21.3%
PSID	-34.7	-11.5	-6.8	-3.9	0.1
GSOEP	-24.3	0.7	1.3	-17.1	0.1

Note: Percentages are the percentage by which post-government OECD adjusted income would have changed due to a change in the individual source alone. Percentages do not add up to 100 because contributions of taxes and imputed value of housing are not presented.

The contribution of labor income declines in the three countries (though to varying degrees) as women are widowed. In the post-widowhood period it accounts for a smaller share of the wife's income than it had earlier. Virtually all the major sources declined, with the exception of public income transfers in the U.S. and Germany.

The differential contribution of other sources across the three countries may be in part due to the nature of the public-private income support system in each country as well as the different classification of income by the surveys. For example, the importance of private pensions in the U.S. is reflected in the larger decline in income due to that source in the U.S. The largely public occupational pension systems in the U.K. and Germany and the inclusion of this pension income in the public transfer aggregation in the CNEF data, accounts for the large contribution of that source to the decline in post-government income. It appears that the mix of public and private transfers and of household size changes, though different in the three countries, work to maintain the same average level of economic well-being of women who are widowed.

## **Regression Analysis**

Not all widows' income change experience conforms to the average in any country. To understand who is better or worse off after widowhood and how systems operate to achieve those differences, we present some preliminary regression analysis. The sample sizes are small and the CNEF aggregates income components that probably have distinct effects. However, the results are suggestive. Of particular interest is the influence on pre-widowhood levels of well-being, of minimum age of survivor benefit receipt, offsets of benefits against other income, and limitations on earnings.



**Table 9**  
**Age Distribution of Widows**  
**(Age in Year B1)**

<u>b1 Age</u>	<u>Country</u>		
	<u>PSID</u> <u>Percent</u>	<u>BHPS</u> <u>Percent</u>	<u>GSOEP</u> <u>Percent</u>
<45	10.0%	6.7%	7.5%
45-54	14.5%	14.2%	11.8%
55-59	11.2%	4.5%	11.4%
60-64	15.2%	10.4%	16.5%
65-74	31.8%	39.6%	35.4%
75+	17.3%	24.6%	17.3%
<60	35.8%	25.4%	30.7%
median	63-64	68-69	64-65
mean	62.9	65.9	63.9

Note: Numbers are unweighted sample size

This group of widows represents a broad range of ages at death; they are not all elderly (Table 9), so their fortunes are potentially different across age groups under different support systems. For younger and older widows, the age distinctions for receipt of survivor benefits made in Social Security systems would be expected to have a differential effect. This paper examined the effect of a widow being under age 60 at the time of her husband's death.

The three countries have different provisions concerning earned income receipt by beneficiaries. Because earnings by the husband in b1 represent a household that would suffer both "retirement" and widowhood consequences upon his death, we explored the effect of husbands' pre-widowhood work on income change. Continued earnings by widows are treated differently as well. This paper explored the effect of the woman's pre-widowhood work on her income as a widow.

The influence of the "program" variables on the change in income from the pre- to post-widowhood years (p1 to b1) was examined. The preliminary analysis indicates that greater initial income is associated with smaller income declines, a reflection of all three systems' linking survivor benefits to pre-widowhood earnings and benefits of the deceased worker. However, it appears that this variable is less important in Britain (though still highly significant), perhaps an indication of the leveling effect of its Basic Benefit.

While older age is associated with smaller negative income changes in both Britain and the U.S. (consistent with older households being more dependent on social insurance income), it is linked to greater change in Germany, with women under 60 being more vulnerable to declines. Finally, the preliminary analysis suggests that within each country employment of husbands or wives in the pre-widowhood period is protective against income falls. It is wife's employment that makes a significant difference in Britain (perhaps because of the absence of an earnings test) but it is husbands' employment that mitigates against income falls in the U.S. and Germany. It is not entirely certain why husbands' employment would have different effects in these countries, although the Basic Benefit in Britain may loosen the link between husbands' earnings (and pension coverage, as in the U.S.) and survivor benefits.

It may also indicate the tighter link between eligibility for retirement (and associated survivor) benefits and place of employment through U.S. pensions and German occupational pensions, in contrast to the individualized but non-specific occupational SERPS in Britain. Finally, that only in Britain does the wife's employment have a mitigating effect on income declines may reflect the absence of income or earnings tests in that country, an incentive for wives to continue to work in widowhood.

## **Conclusions**

This study examines changes in income as women move from marriage to widowhood in three countries, using a data set created precisely to conduct such international comparisons. Because variables in the CNEF file are constructed to assure comparability, there are limits based on the variables offered on this file, and especially the income components.

The widows in this sample represent a broad range of ages at death; they are not all elderly (Table 9), and so their fortunes are potentially different across household structure and support systems. An important finding is that household structure and its change varies across countries and may contribute to the somewhat better than average outcomes for widows in Britain.

The Social Security systems in these countries are different and would be expected to contribute to different outcomes for widows with different characteristics. For younger and older widows, the age distinctions for receipt of survivor benefits made in Social Security systems are expected to have a differential effect. The preliminary analysis indicates some, but not a consistent or large effect. More intriguing are the findings on the pre-widowhood employment of the husbands or wives, which are differentially (but always) protective against income falls. The results may indicate the effect of occupationally linked pensions in the U.S. and Germany and (this is stated with more confidence) the benefits for women of having no income or earnings offsets in Britain's Social Security system.

The question of why different systems lead to similar average outcomes is not answered. More work needs to be done to draw conclusions, though one could clearly hypothesize compensating behavior or savings on the part of couples and of offsetting provisions in these systems. Much more exploration is to be done on the distribution of changes.

The cross-sectional Luxemburg Income Study data show greater income inequality among widows in the U.S. and Britain than in Germany (Gini coefficient of .369, .347, and .266 respectively). This implies that although average levels of well-being may be comparable, the distribution of outcomes may be different.

However, as from all cross-sectional data, it is not known whether this represents differential changes in inequality as women are widowed in these countries or initial differences even when these women were married. Thus, while the average changes in income (even when incomes are household-size adjusted) appear both remarkably similar in spite of differences in support systems (note that the British divergence is due to household structure), these system provisions may affect households across the income/earnings spectrum quite differently. That is the unfinished piece of this exploration.

## References

- Bradshaw, J., and J-R. Chen, 1996. "Poverty in the U.K.: A Comparison with Nineteen Other Countries." LIS Working Paper No. 147 CEPS/INSTEAD, Differdange.
- Buhmann, B.L. Rainwater, G Schmaus, and T.M. Smeeding. 1988. "Equivalence Scales, Well-being, Inequality, and Poverty: Sensitivity of Estimates Across Ten Countries Using the Luxembourg Income Study (LIS) Database," *Review of Income and Wealth* 34(2): 115-142.
- Burkhauser, R.V., K.C. Holden, & D. Feaster. 1988. "Incidence, Timing, and Events Associated with Poverty: A Dynamic View of Poverty in Retirement," *Journal of Gerontology*, 43(2): S46-52.
- Burkhauser, R.V., K.C. Holden, & D. A. Myers. 1986. "Marital Disruption and Poverty: The Role of Survey Procedures in Artificially Creating Poverty," *Demography*, 23(4): 621-631.
- Hagenaars, A.J.M., M. Klaus de Vos, and Asghar Zaidi. 1994. "Poverty Statistics in the late 1980s: Research Based on Micro-Data." Study carried out for Eurostat. Luxembourg, Office for Official Publications of the European Communities. Population and Social Conditions Series 3C.
- Holden, K.C., and C. Zick. 1998a. "Insuring against the Consequences of Widowhood in a Reformed Social Security System." In *Framing the Social Security Debate* by R. Douglas Arnold, Michael J. Graetz, and Alicia H. Munnell, EDS. Washington, D.C.: Brookings Institution Press, 157-170.
- Holden K.C. and C. Zick. 1998b. "The Roles of Social Insurance, Private Pensions, and Earnings in Explaining the Economic Vulnerability of Widowed Women in the United States," *International Studies on Social Security*. Foundation for International Studies on Social Security. Ashgate 4.
- Holden, K. C. and C. Zick. 2000. "Distributional Changes in Income and Wealth upon Widowhood: Implications for Private Insurance and Public Policy, Retirement Needs Framework," *SOA Monograph*, Schaumburg, IL: Society of Actuaries. M-RS00-1

Hurd, M.D., and D.A. Wise. 1989. "The wealth and poverty of widows: Assets before and after the husband's death," In *The economics of aging*, edited by D.A. Wise. Chicago: The University of Chicago Press. 177-200.

Organization for Economic Cooperation and Development (OECD). 1982. *The OECD List of Social Indicators*. Paris: OECD.

Palme, Joachim 1989. "Models of Pensions and Income Inequality: A Comparative Analysis," LIS Working Paper No. 37. CEPS/INSTEAD, Differdange.

Shaver, S. 1996. "Universality and Selectivity in Income Support: An Assessment of the Issues," LIS Working Paper No. 145. CEPS/INSTEAD, Differdange.

Siegenthaler, J. 1996. "Poverty Among Single Elderly Women Under Different Systems of Old-Age Security: A Comparative Review," LIS Working Paper No. 149. CEPS/INSTEAD, Differdange.

Smeeding, Timothy M., Carroll L. Estes, and Lou Glasse. 1999 "Social Security Reform and Older Women: Improving the System." Washington, D.C.: The Gerontological Society of America.

Smeeding, Timothy M. 2001. "Income Maintenance in Old Age: What Can be Learned from Cross-National Comparisons." LIS Working Paper No. 149. CEPS/INSTEAD, Differdange.

Social Security Advisory Board (SSAB). 1999. "The 1999 Technical Panel on Assumptions and Methods," Washington, D.C.: SSAB.

Stapf, H. 1994. "Old Age Poverty in Selected Countries of the European Community-Are Women Disproportionately Affected?" LIS Working Paper No. 105, CEPS/INSTEAD, Differdange.

Stanfield, Rochelle. 2000 "Social Security: Out of Step with the Modern Family," Washington D.C.: The Urban Institute. Online at:  
[http://www.urban.org/retirement/reports/out\\_of\\_step.html](http://www.urban.org/retirement/reports/out_of_step.html)