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Are Women Treated Fairly in Today's Social Security System?

Richard V. Burkhauser

# UNIVERSITY OF WISCONSIN ~ MADISON

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## ABSTRACT

The increasing commitment of women, particularly married women, to the labor market has made the Old Age Survivors Insurance (OASI) one-earner model of the household obsolete. Using data from actual OASI files, this study shows that while households currently collecting OASI benefits receive more than an actuarially fair return on their contributions, one-earner married couples do better than either two-earner married couples or single individuals. Barring radical reform of the system, however, it is difficult to propose changes consistent with both the social insurance and social adequacy goals of OASI.

# Are Women Treated Fairly in Today's Social Security System?

The increasing commitment of women, particularly married women, to the labor market has led to a serious questioning of the implicit model of the family on which much tax and transfer policy is based. The additional deductions allowed working women for child care expenditures in the Tax Reform Acts of 1976 and 1978 are a recognition by the Congress of the role of married women in the work force. The continuing debate over the "marriage tax" is another ramification of the rise of two-earner households.

In this paper the current controversy over the treatment of women within Old Age Survivors Insurance (OASI) is considered. Two aspects of the OASI system are seen as important in analyzing proposals aimed at changing the treatment of women: The first is the dual nature of the system; the second is the system's method of assigning within-household benefit rights. With respect to the dual nature of the system, the analysis differentiates between the social insurance aspects of OASI. which relate benefits to contributions, and the social adequacy aspects of OASI, which transfer benefits using criteria other than contributions. It will be argued that the changing role of women in the household over the last three decades has exacerbated the inherent conflict between these two system goals (social insurance and social adequacy) and that proposed changes in the treatment of women must take this conflict into consideration. With respect to the assignment of benefit rights within a household, it will be argued that the present system of assigning the rights to an earnings stream to the individual who actually earned that income is not

preferable to a system based on equal sharing of the household earnings stream by the couple.

1. OASI: SOCIAL INSURANCE VERSUS SOCIAL ADEQUACY

A recurring theme in the evolution of the present OASI system is the conflict between its goals of (1) providing a safe financial instrument for retirement, and (2) providing a means of redistributing income in the name of social adequacy. As originally conceived in 1935, OASI was close to an actuarially fair private insurance system with future benefits based directly on cumulative contributions made by individuals over their work life. Initial contributions were to begin in 1937 and no benefits were to be paid until 1942. This pure social insurance model was significantly altered by the 1939 Amendments to the Social Security Act, which heavily emphasized the social adequacy goals.

A major feature of these Amendments, which were based on the report of the first Social Security Board, was the creation of a spouse benefit. As Arthur Altmeyer (1968), a member of the first Social Security Board and first Commissioner for Social Security, recalls,

It [the board] recommended payment of monthly benefits to aged wives. . . . this result to be achieved in part by reducing the monthly retirement benefits payable in later years to single workers (p. 92).

He further states that

since a monthly benefit was also payable to the wife of a married worker who retired (if she was at least 65 years of age), the new patterns of benefits could be characterized as family protection rather than individual protection (pp. 101-102).

Besides spouse benefits, other changes brought about by the 1939 Amendments were a progressive benefit formula, a minimum benefit, and a work test.

In a political era in which federal programs to provide social adequacy were nearly nonexistent, these redistributive instruments that were added to OASI provided such a mechanism.

The spouse benefit provided a married working man with an additional benefit over and above that provided to a single worker with the same earnings record, but it is important to note that the wife's right to a benefit was based on the earnings record of the husband.

#### 2. SPOUSE BENEFITS AS A REDISTRIBUTION MECHANISM

In attempting to disentangle the social insurance or annuity aspects of OASI from the redistributive or social adequacy aspect, Burkhauser and Warlick (1978) compare the benefits that workers would have received if they had purchased private annuities with what they actually received under OASI. The advantage of such a life cycle technique is that it dispels the notion that those who are currently receiving OASI benefits **are, in any meaningful sense of the term, receiving pure transfers from** the government. Rather, it recognizes the link between contributions made into the system at younger ages with benefits received later in life and provides a mechanism for distinguishing benefits which are the result of these previous contributions from pure transfers. The effectiveness of current transfer mechanisms in the system can then be assessed.

In order to estimate the impact of OASI as a redistributive mechanism, it is useful to look first at what the pattern of payments and benefits would be if the system acted merely as a saving plan for retirement. In such a fair annuity system, individuals' contributions into the system must equal the expected discounted value of all their future benefits.

The cost of purchasing a one dollar annuity for a single male-- $PVM_1$ -at period (o) is estimated by equation (1):

$$PVM_{i} = \sum_{j=0}^{n} PM((i+j)/i) \cdot (1+r)^{-j}$$
(1)

where

PM(i/j) = probability that a male will live to age i given that he is alive at age j when acceptance age  $\leq i \leq 100$ . It is assumed to be above age 100.

r = rate of interest.

The cost of purchasing a one dollar annuity for a single female-- $PVF_i$ --at period (o) is estimated by equation (2):

$$PVF_{i} = \sum_{j=0}^{n} PF((i + j)/i) \cdot (1 + r)^{-j}$$
(2)

where

$$PF(i/j)$$
 = probability that a female will live to age i, given that  
she is alive at age j when acceptance age  $\leq i \leq 100$ . It  
is assumed to be above age 100.

The cost of purchasing a one dollar joint and two-thirds to survivor annuity PVMF for a married worker (i) with spouse (j) is estimated by equation (3):

$$PVMF_{ij} = \frac{PVM_{i} + PVF_{j} + PVC_{ij}}{3}$$
(3)

where

PVC<sub>ij</sub> = the cost of a one dollar annuity paid if either member of a married couple survives. This is shown in equation (4):

$$PVC_{ij} = \sum_{k=0}^{n} [PM((i+k)/i) + PF((j+k)/i) - PM((i+k)/i) + PF((j+k)/j)] \cdot (1+r)^{-k}.$$
 (4)

Equation (3) approximates the current OASI system of distributing benefits. If both the husband and wife are alive in any one period, each of the terms in equation (3) is positive for that period and benefits equal B. If the husband is alive but his spouse is dead, the PVM and PVC terms are positive but the PVF term in that period is zero and benefits equal (2/3)B. If the wife is alive but the husband dead, PVM is zero, PVF and PVC positive, and benefits again equal (2/3)B. For example, if a married couple receives \$3000 per year in OASI benefits when both are alive, then the death of one member lowers benefits to \$2000 per year.

In the world of 1939 where women, and especially married women, rarely performed market work, the movement from a system based on the individual to this type of family protection system, as suggested by Altmeyer, provided a benefit to all married couples at the expense of singles. In effect, single workers are forced to pay premiums consistent with equation (3) rather than those consistent with equations (1) or (2). Because they are single, one term in equation (3) must always be zero and the maximum yearly benefit they could obtain is (2/3)B. Thus, a single worker with the same pattern of contributions as his married counterpart receives only two-thirds of the married worker's yearly benefits.

#### 3. THE CHANGING ROLE OF WOMEN IN THE WORK FORCE

Since 1939, OASI has dramatically increased in both size of benefits and extent of coverage, but the rules used to distribute benefits remain those envisioned by the first Social Security Board. It can be strongly argued that whereas the one-earner model of the household (where the husband worked and the wife stayed home) was accurate in 1939, it is not

typical today. In 1940, only one woman in four actively participated in the labor market and in only three out of twenty households were both the husband and wife in the labor force at the same time. By 1976, however, nearly one-half of all women were actively in the work force, and in one-half of all households in the country both the wife and husband were performing market work.(U.S. Department of Commerce, 1970; U.S. Department of Labor, 1976, 1978). This change in the role of married women has made 'he one-earner household model of OASI obsolete.<sup>1</sup>

As a result of the increase in two-worker households, there has been a growing call for reform of the one-earner model as a mechanism for income distribution. The reason for concern on the part of working women becomes clear by once again considering equation (3). Like single men and women, second earners in a household find that they are forced to purchase an annuity on terms less favorable to them than to one-earner households.

The household protection schedule of OASI is based on a single-worker earnings record. Contributions by the wife into the OASI system go toward creating a separate individual worker earnings record.<sup>2</sup> The net effect of this individual earnings system is that second earners, in effect, purchase redundant insurance. Rather than receiving combined total contributions, two-earner households receive only the larger benefit of the two separate earnings records they produced. For example, in a household where the wife is eligible for \$1500 per year as a spouse on her husband's earnings record, her individual contributions into the system produce no additional benefits to the household until her individual benefits exceed \$1500.

4. THE RESULTS OF THE CURRENT SYSTEM

The creation of the 1973 Social Security Exact Match File makes it possible to estimate the relationship between lifetime contributions into

the OASI system and expected benefits from that system. It merges individual records from the 1973 Current Population Survey with actual OASI earnings and benefit records. Burkhauser and Warlick (1978) developed a technique for estimating the value of a yearly annuity that is consistent with equations (1) through (3). For each individual, the yearly value of the actuarially fair annuity that could have been purchased with that person's contributions (including both employee and employer contributions) in the OASI system is estimated. For married couples, equation (3) is used but benefits are cumulative. Using this technique, actuarially fair yearly benefits can be compared with actual yearly OASI benefits.

Table 1 compares the pure distributional impact of OASI by marital status. This is a subsample of married couples and single individuals who are OASI beneficiaries between the ages of 66 and 71.<sup>3</sup> Holding total yearly OASI benefits constant, the value of an actuarially fair yearly annuity consistent with household contributions into the system is compared across households. Despite the redistributive mechanisms in the system, this table shows that all those receiving OASI benefits in 1972 received in excess of actuarially fair returns. Because of these redistributive mechanisms, however, the size of the pure transfer varied across individuals and households.

For example, looking across households which receive between \$3251 and \$3500 in yearly OASI benefits we see that the mean two-earner household in this category would receive an actuarially fair benefit of \$1470, of which \$923 is based on the husband's contributions and \$547 on the wife's contributions. The mean one-earner household in the \$3251 to \$3500 category would receive an actuarially fair benefit of \$843, with \$829

	Two-Earner Household (b)				One-Earner Household (¢)							
									Single Individuals			
•	Male (d)	Female (e)	Total (f)	Percentage	Male (g)	Female (h)	Total (k)	Percentage	Male (d)	Percentage	Female (e)	Percentage
Total Population (thousands)	• · · ·		416				418		170		248	
Current Yearly Household OASI Benefit (a)	<u></u>	<u></u>									, , , , , , , , , , , , , , , , , , ,	
\$ 1 - 1,750			0	0	148	11	159	9	333	32	295	26
1,751 - 2,000	172	170	342	3	189	1	190	4	674	8	630	9
2,001 - 2,250	243	188	431	1	414	24	438	2	742	14	869	14
2,251 - 2,500	458	189	647	4	615	13	628	7	1,295	14	1,134	13
2,501 - 2,750	349	269	618	4	485	28	513	5	1,660	6	1,220	11
2,751 - 3,000	413	152	565	3	804	16	820	6	1,845	7	1,439	10
3,001 - 3,250	767	300	1,067	7	900	2	902	8	2,134	14	1,067	7
3,251 - 3,500	923	547	1,470	7	829	14	843	9	1,584	4	1,516	6
3,501 - 3,750	1,235	507	1,742	5	840	16	856	5				
3,751 - 4,000	1,195	469	1,664	8	1,225	5	.1,230	9				
4,001 - 4,250	1,241	343	1,584	12	1,484	37	1,521	8				
4,251 - 4,500	1,252	419	1,671	10	1,804	16	1,819	12				
4,501 - 4,750	1,585	444	2,029	17	1,583	14	1,597	<b>10</b> .				
4,751 - 5,000	1,612	527	2,139	9 <sup>.</sup>	1,597	26	1,623	6				
5,001 +	1,698	1,117	2,815	9	2,055	0	2,055	2				
Total Percentage				100				100		100		100

Differential Impact of Social Security Holding Total Benefits Constant

Note: For a complete description of the methodology used to calculate this Table, see Appendix.

(a) = Total yearly OASI benefit to the Household in 1973 under the assumption that market earnings do not exceed the earnings test disregard level.

(b) = Husband and wife both eligible for retired workers benefits on their own record.

(c) = Husband eligible for retired workers benefits on his own record and wife eligible for spouse's benefits only.

(d) and (g) = Yearly annuity benefit in an actuarially fair system based on actual contributions of male.

(e) and (h) - Yearly annuity benefit in actuarially fair system based on actual contributions of female.

(f) = (d) + (e) Total household benefits in actuarially fair system.

(k) = (g) + (h) Total household benefits in a anially fair system.

based on the husband's contributions and \$14 on the wife's contributions. (Note that in one-earner households, a wife's contributions into the system would be insufficient to make her eligible for OASI on her own record.) Single males would receive \$1584 and single females \$1516.

The table documents the distributional impact of forcing single individuals and married two-earner households into a system designed for married one-earner households. At each benefit level, singles contribute more into the system than their married counterparts. Because a large part of a second earner's contributions into the system are redundant over most of the range of benefits, two-earner households tend to contribute more into the system than their one-earner counterparts. However, over the entire population, the across-generational transfers are sufficient to make all households better off than they would have been in an actuarially fair system. It is important to note that the redundant two-earner contributions are greatest at the upper end of the benefit schedule. This is not surprising since very high income males generate high spouse benefits, making it likely that any contributions by the wife are redundant.

Table 2 presents an alternative way of viewing the net effect of a wife's contributions into the system. In this table, the adjusted primary insurance amount (PIA) of the husband is held constant across households. Actual household OASI benefits and the wife's actuarially fair benefit are then compared within PIA classes but across households. The difference column shows the net transfer effect of the wife's contributions into the system. The pure transfer column is the measure of total OASI benefits minus the actuarially fair payment of both husband and wife in two-earner households.

For example, looking across households in which the male's adjusted PIA is between \$231 and \$250 we see that the mean two-earner household receives \$4634 in OASI benefits, compared with \$4335 for the mean oneearner household--a net difference of \$299. But in order to get this increase, the wife in the mean two-earner household paid contributions into the system in excess of \$433 over those paid by the wife in the mean one-earner household (\$452 minus \$19).

In effect, the redundant payments of the wife in the mean two-earner household at this PTA level are such that she receives a marginal return of \$299 in OASI benefits from contributions that would have yielded, on net, \$433. The result is that for this PIA class, the wife's payment yields a negative stream of \$134 (\$299 minus \$433). However, as was seen in the previous table, all households continue to receive benefits in excess of what their combined contributions would have yielded in an actuarially fair system. The pure transfer for two-earner households in the \$231 to \$250 PIA range is \$2559 even after the marginal effect of the wife's contributions is taken into account.

Women married to men with high PIAs make redundant contributions into the system. At the higher PIA levels, their households receive less than a dollar for dollar increase in OASI benefits from their contributions. At the lower PIA levels, however, this has not been the case and at all PIA levels the pure transfer to the household remains positive.

#### 5. PROPOSED CHANGES IN THE SYSTEM

The changing role of women in the work force strains the current treatment of spouses by OASI. One type of proposal to relieve this

Table	2
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Differential Impact of ''Ife's Work on OASI Holding Husband's Primary Insurance Amount (PIA) Constant

	Two-Ea	arner Hous (b)	ehold	One-Ea	arner Hous (c)	ehold	Difference (s)	Pure Transfer (t)	
Husband's PIA (p)	Actual OASI Male (a) (d)		Female (e)	Actual OASI (a')	Male (g)	Female (h)	(a-a')-(e-h)	a-(d+e)	
50 - 70				1,217	99	18			
71 - 90	2,570	145	539	1,446	136	8	593	1,886	
91 - 110	3,050	280	667	1,793	202	4	594	2,103	
111 - 130	3,202	464	405	2,235	571	14	576	2,333	
131 - 150	3,103	460	242	2,510	517	27	378	2,401	
151 - 170	3,444	900	344	2,876	694	· 12	236	2,200	
171 - 190	3,561	1,187	469	3,260	947	11	-157	1,905	
191 - 200	4,237	1,266	639	3,523	839	12	87	2,332	
201 - 210	4,366	1,338	487	3,768	881	11	122	2,541	
211 - 220	4,264	1,229	546	3,883	1,346	1	-165	2,489	
221 - 230	4,355	1,375	364	4,090	1,621	46	-53	2,616	
231 - 250	4,634	1,623	452	4,335	1,679	19	-134	2,559	
251 - 270	4,985	1,987	500	4,663	1,524	20	-158	2,498	
271 - 290	5,246	1,607	391	4,972	1,876	0	-117	3,248	

Note: For a complete description of the methodology used to create this Table see Appendix. Letters a through k are defined in Table 1.

- (p) = Primary Insurance Amount adjusted for age at which benefits were taken. No earnings test effects are considered.
- (8) = Difference is the increase in actual OASI benefits due to a wife's contributions minus the benefit she would have been entitled to from a private actuarially fair pension. This difference measures the net change in pure transfers based on wife's work.
- (t) = Pure transfer is actual OASI benefits minus the actuarially fair portion of OASI benefits. This difference measures the pure transfer component of current OASI in a two-earner household.

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strain is to adjust the method by which benefit rights within a household are assigned. Our present system follows the English common law procedure of assigning the rights to an earnings stream to the individual who actually earned that income. An alternative arrangement of property rights might assign an equal share of all household earnings to each spouse. This type of arrangement, usually thought of as "community property," has its origin in the Roman Catholic tradition of law. Such a plan would continue to make the family the unit of protection under OASI, but in contrast to our present system of providing rights to a spouse only as a derivative to the earnings of the primary earner, this system provides an equal sharing of the household earnings stream by the couple.

In an actuarially fair system, such a change in property rights within a household would have no effect on the distribution of benefits across households. A one-earner household in which the husband earned \$20,000 per year would continue to receive benefits based on those earnings. The difference would be that two checks would be sent, one to the husband based on his \$10,000 per year earnings record and one to the wife based on her \$10,000 per year earnings record.

In the two-earner household where the husband makes \$12,000 per year and the wife \$8,000, each would be credited with a \$10,000 earnings record. Such a system avoids the need for a spouse benefit since the spouse is entitled directly to one-half the earnings of the household.

Adjusting to this form of within-household property rights would be relatively simple in an actuarially fair system, but it has important across-household implications, given the other redistributive mechanisms in our current OASI system. For instance, in estimating OASI benefits,

the PIA is set so that contributions of lower earners yield higher marginal benefits than those of higher earners. By dividing the earnings record equally, the marginal return for all married couples will increase. But removal of the spouse benefits reduces the household benefits of one-earner households and some two-earner households. Table 1 and Table 2 suggest that the greatest beneficiaries of such changes are likely to be women married to high-earning men, and thus historically high-earning households.

The use of the spouse benefits as a redistributive mechanism makes less sense with the rise of the two-earner household. Like other redistributive mechanisms added on to the system in 1939, it is being challenged by those who feel they are unfairly treated. Munnell (1977) and others (see, for example, Tolley and Burkhauser, 1977; and Burkhauser and Warlick, 1978) have looked at the total impact of the various redistributive aspects in the current OASI system and suggest that a fundamental change in the system is necessary. They argue that more efficient mechanisms for meeting social adequacy goals are available today than was the case in 1939. Supplemental Security Income (SSI), established in 1974, is a pure transfer system with benefits unrelated to contributions that treats individuals more uniformly than OASI. They contend that a strengthened SSI should be allowed to assume responsibility for meeting social adequacy goals thus allowing OASI to become more actuarially fair. The 1977 Amendments to the Social Security Act tacitly recognized the existence of SSI as a mechanism for providing social adequacy when it froze the minimum benefit. This, in effect, will remove what had been a redistributive mechanism in OASI, transferring this responsibility to SSI.

Such sweeping reforms of the OASI system would solve the inequities for two-earner households discussed earlier. This type of reform is also compatible with a community property concept of within-family property rights. But such radical change in the system is highly unlikely in the immediate future, and so we are forced to choose between the conflicting annuity and redistributive goals within the present system.

Using an actuarially fair return as a yardstick, everyone currently receiving OASI benefits has been truated fairly. But one-earner households have done better than single individuals and two-earner households. In a marginal sense, some women in high income, two-earner households have received less than an actuarially fair return on their contributions vis-a-vis one-earner households. But as a member of a household such women still have received positive OASI transfers. The intergenerational effect which has made it possible to provide even the highest earners with positive returns is not likely to continue. Burkhauser and Warlick (1978) estimate that this pure across-generations transfer was about 50 percent for those first accepting benefits in 1972. This is a fall from 90 percent for those first accepting benefits in the early 1950s. Before any proposal to change the treatment of women under OASI is decided upon, hard decisions will have to be made with respect to intragenerational income distribution.

#### 6. CONCLUSIONS

What was once considered a major strength of the social security system, its blend of annuity and redistributive qualities, is now central to much of the controversy concerning its performance. The fairness of

many of the redistributive features added by the first Social Security Board to provide social adequacy is being questioned. By its treatment of women it is clear that OASI is geared to the outdated norm of the husband in the work force and wife at home. Two-earner households are now in the majority and the lifetime commitment of women to the labor force seems likely to continue.

Using the English common law tradition, OASI assigns benefit rights on the basis of individual earnings records, with spouse benefits a derivative of the husband's earnings. Such a system offers little to recommend it over the community property system of within-household property rights. Using the community property concept, household earnings would be shared and portable.<sup>4</sup> Several of the current proposals for change in the treatment of women by OASI argue implicitly for this type of change in property rights.

In an actuarially fair system a change of this nature would have no effect on across-household income distribution; it would merely reassign within-household benefits. However, in our current system such a change would have important effects on the distribution of OASI benefits. It is likely that the major benefactors of a substitution of household earnings record for spouse benefits would be households with histories of high earnings, as Tables 1 and 2 brought out. To this point in its history all recipients of OASI have received better than a fair actuarial return on their contributions into the system. But the forces that made this possible are dwindling; a slowly eroding budget calls for adjustments to the system that respond to the changing role of women by taking both equity and efficiency goals into consideration.

#### APPENDIX

Algorithms Used to Establish Actuarially Fair Annuities

The cost to a household of purchasing a fixed dollar immediate annuity will vary with the rate of discount and life expectancy chosen in the calculation. In this study lifetime contributions made into the OASI system by each member of a household were known. Given this information, the value of these contributions was then estimated at the age OASI benefits were first taken. Using this value as the purchase price, the size of the guaranteed yearly income purchased was then estimated for each household. Table 1 shows the effect of varying both the rate of return on OASI contributions and the rate of discount on future annuity values.

The yearly expected probability of survival is based on public health service mortality tables and is a function of age and sex. It was assumed that each member of the household purchased his or her joint and two-thirds annuity separately and with the provision that benefits would not begin until the age when actual OASI benefits were taken.

PM(i/j) = probability that a male will live to age i, (1)given that he is alive at age j when acceptance $age <math>\leq i \leq 100$  else 0.

PF(i/j) = same as (1) for females. (2)

The cost of a one dollar annuity for a single man is estimated by equation (3):

$$PVM_{i} = \sum_{j=0}^{70} PM((i+j)/i) \cdot (1+r)^{-j}.$$
 (3)

The cost of a one dollar annuity for a single female is estimated by equation (4):

$$PVF_{i} = \sum_{j=0}^{70} PF((i+j)/i) \cdot (1+r)^{-j}.$$
 (4)

The cost of a one dollar joint and two-thirds to survivor annuity for a couple is estimated by equation (5):

$$PVMF_{ij} = \frac{\frac{PVM_{i} + PVF_{j} + PVC_{ij}}{3}$$
(5)

where PVC is the cost of one dollar annuity paid if either member of a married couple survives. This is shown in equation (6):

$$PVC_{ij} = \sum_{k=0}^{70} [PM((i+k)/i) + PF((j+k)/j) - PM((i+k)/i)$$
(6)  
• PF((j+k)/j)] • (1+r)<sup>-k</sup>.

## Table A.1

# Total Benefits for an Actuarially Fair OASI System Using Different Rates of Return

	Interest Received on OASI Contributions				
Rates of interest used to discount future annuity benefits	U.S. government bond rate	Average stock market rate			
(percentage)	(\$ billions)	(\$ billions)			
2	2.3	5.7			
5	3.0	7.4			
10	4.3	10.6			

Note: Interest received on OASI contributions is based on values estimated on 1973 Social Security Exact Match File.

## NOTES

<sup>1</sup>The contributions of women into OASI have not been trivial. Women receiving OASI by right of their husband's earnings record alone have been in the minority since 1955. In 1975, only three married women in ten received spouse benefits in this manner (U.S. Department of HEW, 1977).

<sup>2</sup>Throughout this paper the wife is treated as the second worker in a two-earner family, since this is the dominant case. In some families, however, the wife is the higher wage earner.

<sup>3</sup>Divorced, Separated, and Widows were not included in this sample.

<sup>4</sup>Portability would solve the problem of divorced women who lose all rights to their former husband's earnings record unless they were married for 10 years.

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