INCOME EQUIVALENCE CALCULATIONS FOR DIVORCE DECISIONS

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This paper demonstrates how income-to-needs ratios can: (a) be used to compare the income equivalence of two households, (b) aid in the divorce negotiation and decision-making processes, (c) enhance legal and judicial education regarding the consequences of financial decisions at divorce, and (d) change the assumptions which guide division of incomes at divorce. The information is from a random sample of court case records in Minnesota and concerns 1986 divorces with minor children.

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How Much Income to Transfer?

A legitimate concern of divorcing parties, attorneys, and judges is how much income should be shifted to the custodial-parent household in order to provide reasonable levels of living for all family members. There are state guidelines for amounts of child support payments, but judges are free to deviate from these guidelines. It is difficult to determine an appropriate dollar amount of the income transfer, particularly when spousal maintenance payments are also involved. An effective method for comparing the two household incomes is needed by judges to assist them in the decision-making process. Teaching judges and attorneys to calculate income-to-needs ratios in order to evaluate income equivalence of two households could be an important step toward gender equity in divorce settlements. The underlying assumption of this methodology is that the incomes of the two households should be allocated so that each of the households has income in proportion to its adjusted family size (Lazear & Michael 1988, p. 158).

Comparisons of economic well-being across households are difficult because only the financial assets and money income components of economic well-being can be easily measured. Household labor, capital, and management incomes, as well as physical and human capital assets, are forms of non-money resources and are important determinants of economic well-being, but are difficult to quantify. The courts examine only the stock of financial assets and money incomes of families as indicators of economic well-being. The concern of the court is to transfer money income from the noncustodial to the custodial parent household to provide adequately for the needs of the child(ren). Income adequacy is defined in this paper as the extent to which money income meets reasonable needs (Morgan & Duncan 1982). The above definition assumes that the measure of income adequacy is the ratio of income in the numerator to some standard of income needs in the denominator. This ratio-based measure of economic well-being is called an income-to-needs ratio.

Income-to-needs ratios are more accurate than per capita income for comparing the income adequacies of two households. Per capita income does consider the demands on income but fails to account for the marginal costs of a second or third person added to a household. Per capita income gives a measure of income available per person but does not indicate income <u>needs</u> or the adequacy of the income per person. Per capita income is also not an appropriate concept to use when income is not distributed evenly in families to persons within the group. The average household typically allocates about 2.5 times the amount of income to an adult as it does to a child (Lazear & Michael 1988, p. 111). Thus, "the common practice of treating all family members as if they are in the same financial boat is surely a gross oversimplification" (Lazear & Michael 1988, p. 147).

The problem judges face in divorce cases is that of determining a simple yet effective way to compare levels of living across two households of differing incomes and sizes. This economic problem has captured the attention of economists since 1895, when Ernst Engel addressed the question. The methodology of computing income equivalence across households has a long history in family economics and there is an extensive literature on the topic.

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The details of the methodology are beyond the scope of this paper but the interested reader can refer to the following sources for a more complete explanation: Barten (1964), Deaton & Muellbauer (1980), Lazear & Michael, (1980, 1988), Muellbauer (1977, 1980), Prais & Houthakker (1971), and Pollak & Wales (1979). The use of income-to-needs ratios in family research can also be found in several recent publications (Christensen 1987; Christensen & Rettig in press; Downey & Moen 1984; Duncan 1984; Hoffman & Duncan 1988; Hoffman & Holmes 1976; Morgan 1989; Rettig & Christensen 1988; Smith & Zick 1986; Zick & Smith 1988). The income equivalence methodology has been used in the United States for developing the poverty level income guidelines.

Calculation of Income-to-Needs Ratios

The poverty level guidelines were developed as an attempt to specify the minimum money income that could support a person or family at the lowest level of living consistent with the standards of living for this country. They are based on the amount of money needed to purchase a nutritionally adequate diet, on the assumption that no more than one third of the income is spent for food (Orshansky 1969, p. 38). Two households that spend the same percentage of income on food are assumed to be equally well off. The amount of money income required for different household sizes is then calculated. The poverty level income guidelines for the continental United States in 1986 were: (a) $5,360 for one person, (b) $7,240 for two, (c) $9,120 for three, (d) $11,000 for four, and (e) $12,880 for five persons (Family Economics Review 1987, p. 23). These income levels by household size were assumed to represent a minimum subsistence level of living in 1986 and therefore represented an income needs standard.

The money incomes of households can be compared to the poverty levels for one indicator of income adequacy. If one divides the household income by the poverty level for the household size, this results in an income-to-needs ratio. If the ratio is equal to one, it means that the income is meeting a minimum subsistence level of living for the household. The ratio for one household can then be compared to that of a second household to determine which of the incomes is more "adequate," according to a minimum subsistence needs standard. The incomes of the two households are comparable because a common denominator has been used. Placing the incomes on a comparable standard of income needs for the denominator, such as poverty level incomes, gives guidance about the adequacy of the incomes in each household based on a national policy standard.

Comparison of Income-to-Needs Ratios Across Households

The method of calculating income-to-needs ratios and comparing them across households is demonstrated by using data from a recent study. Data were collected from 1,153 randomly selected court case records in the ten judicial districts in Minnesota. These were divorces with final decrees in 1986 in which there were minor children. The cases in the total sample represented 19% of the 6,117 divorces with minor children and 8% of the 14,411 total divorces in the state for that year. The sample for this paper includes cases in which sole physical custody was awarded to one parent and income information was present in the court records (n=504).

Table 1 demonstrates the method of calculating income-to-needs ratios.[5] The economic well-being of custodial and noncustodial parents is compared (using the median for the study sample) after the transfer of the amount of child support recommended by the state guidelines. The better position of noncustodial parents is evident. The economic well-being of each parent would decline after divorce, but the greatest decline would be for custodial parents if the guidelines were strictly observed. The incomes of the two households would be equivalent if the difference between the two ratios were equal to zero.

TABLE 1. Income Equivalence of Households Based on Median Incomes and State Guidelines Child Support Amounts for 1986 Dissolutions, Sole Physical Custody

	Custodial Parents	Child Support Obligors
Yearly Net Income	$9,600[a]	$14,442[b]
Minnesota Guideline Annual Child Support	+$4,209[c]	-$4,209
Post Divorce Net Income After Transfer	$13,809	$10,233
Poverty Level (1986)	$9,120 (3 persons)	$5,360 (1 person)
Ratio of Income to Needs:[d] Two Children Families	$\frac{\$13,809}{\$9,120} = 1.51$	$\frac{\$10,233}{\$5,360} = 1.91$[e]

[a]n=420 cases
[b]n=504 cases
[c]n=495 cases
[d]1=poverty level, 1.25 = near poor
[e]Intact families = $\frac{\text{yearly net income}}{\text{poverty level for four}}$ $\frac{\$24,042}{\$11,000} = 2.18$

A specific case is used in Table 2 to demonstrate the economic consequences of divorce for one family in the sample by comparing the income-to-needs ratios before and after divorce. This is a case in which the child support award was below the state guidelines and no spousal maintenance was awarded. If the judge had calculated the ratios and compared the income equivalence of the two

[5]The example departs from other research by using net income instead of total household income. Total household income was usually not available in the court records, since state child support guidelines are based on the net income of the obligor.

households, it is less likely that the decision would have been the same. It is difficult for the outside observer to find the equity in this divorce settlement without at least looking at the property division or seeking additional information.

TABLE 2. Comparison of Income-to-Needs Ratios for Custodial and Noncustodial Parent, Case # 19

	Custodial Parent	Child Support Obligor
Yearly Net Income ($51,624)[a]	$7,152	$44,472
Yearly Child Support Award	+$9,000	-$9,000[bc]
Post-Divorce Net Income After Transfer	$16,152[d]	$35,472[e]
Poverty Level Income (1986)	$9,120 (3 persons)	$5,360 (1 person)
Ratio of Post-Divorce Net Income to the Needs Standard	$\frac{\$16,150}{\$9,120} = 1.77$	$\frac{\$35,472}{\$5,360} = 6.62$[e]

[a]Pre-divorce income-to-needs ratio: $\frac{\$51,624}{\$11,000} = 4.69$

[b]Two children, ages 17 and 14 years in 1986. Monthly child support of $750 is 20% of noncustodial parent's monthly net income of $3,706 and 10% below the state child support guidelines.

[c]The $9,000 child support award is $4,500 per child per year and an income per child of $86.54 weekly. The $4,500 is 73% of the $6,178 cost of raising a 17-year-old and 79% of the $5,641 cost of raising a 14-year-old in 1986.

[d]Post divorce net income of $16,152 is 31% of pre-divorce net income. Post-divorce per capita income of $5,384 is 42% of pre-divorce per capita income of $12,906. The change in per capita income is $5,384 - $12,906 = -$7,522 divided by $12,906 = -.58 or -58%.

[e]Post-divorce net income of $35,472 is 69% of pre-divorce net income. Post-divorce per capita income of $35,472 is 275% of pre-divorce per capita income of $12,906. The change in per capita income is $35,472 - $12,906 = $22,566 divided by $12,906 = 1.75 or +175%.

The importance of actually calculating the income-to-needs ratios increases when parental incomes are more similar ($9,325 and $15,672). Suppose that an annual child support award of $5,016 is subtracted from the noncustodial parent's net income, resulting in a net income of $10,656. The child support award is added to the custodial parent's net income, which now becomes $14,341. The noncustodial parent, typically the father, complains bitterly that he is being treated unfairly, since the custodial parent's income is so much higher. When the income-to-needs ratios are computed, however, the situation appears to be different. The attorney or mediator divides the custodial parent's $14,341 by the poverty level for a household of three ($9,120 in 1986) and shows that the income of the custodial parent is only 1.57 times above the poverty level. The non custodial parent's income of $10,656 is divided by the poverty level for a one-person household ($5,360 in 1986), which shows that his income is 1.99 times above the poverty level. Neither parent has a very high level of living, but the two households are not far apart, and the noncustodial parent is slightly "better off" that the custodial parent in this example. The calculation can thus provide important information for attorneys and mediators in the negotiation processes of divorce.

Using Income-to-Needs Ratios in Court Decisions

Difficult court decisions concerning allocation of resources between custodial and noncustodial households must be made on a case-by-case basis, because no single standard or methodology works effectively for all family situations. Uniformity of rules or procedures does not accomplish equity or fairness in all situations. Under the assumptions of the current legal system, attorneys and judges need to use this methodology as an aid in the decision-making process and not as "The Decision Rule" for all cases. The first step in the decision process can be the comparison of the income equivalence of the two households after the transfer of the child support amount.

We have been working cooperatively with one family court judge to develop worksheets that can be used by judicial officers as a first step in examining equity of income for the new households of the divorced family. The first part of the worksheet outlines the process of calculating and comparing the income-to-needs ratios with the post-divorce net incomes after the transfer of the child support money. The second part of the worksheet adjusts the incomes so that the two income-to-needs ratios will be equivalent. The greatest advantage of the methodology is that the income adequacy of two households can be compared and a number can be calculated for how much income should be shared by the highest income earner in order to achieve equivalence. The worksheet gives the poverty level income guidelines for 1989 which are appropriate for use with 1989 incomes.

The comparison of income-to-needs ratios for two households makes the assumption that a judge should "allocate the income between the two households so that each of the households has income in proportion to its adjusted family size: The household as the unit of analysis" (Lazear & Michael 1988, p. 158). The use of the poverty level as the income needs standard in this paper is similar to the methodology discussed by Lazear & Michael (1988) for their fourth criterion resource allocation rule. The Lazear and Michael (1988, p. 158) adult equivalents formula allowed the noncustodial household of one person 35% of the combined pre-divorce incomes and the custodial household of three persons 65% of the combined pre-divorce incomes. The use of the poverty level income guidelines, rather than calculating income needed by adult equivalents, is slightly more favorable to the noncustodial household. The present method gives the noncustodial household 37% and the custodial household 63% of combined poverty level incomes when there are two children in the family. For one-child families, the custodial household receives about 57% and the noncustodial household receives 43% of combined poverty levels for the two households (Table 3).[6]

TABLE 3. Percentage of Combined Poverty Level Incomes Allocated to Custodial and Noncustodial Parent Households Using the Present Worksheet

Family Size	Percentage to Custodial Household	Percentage to Noncustodial Household
One Child	.575	.425
Two Children	.629	.370
Three Children	.672	.328
Four Children	.706	.294
Five Children	.735	.265

The use of this worksheet has some disadvantages for high-income parents. The transfer of income between households using the income-to-needs ratios may not be appropriate for family situations in which the custodial parent is the one who has a significantly higher income. Should this person transfer income to a household without the children? The noncustodial parent with the significantly higher income will risk having to share a greater portion of income with the custodial household than may seem reasonable to many people. The case example first reported in Table 2 is calculated on the worksheet in Table 4 and demonstrates this risk. The 1986 poverty levels were used in this example because the income data were from 1986. The child support obligor would be required to transfer $25,371.12 to the custodial household, which is 57% of the yearly net income of $44,472. The $25,371 is theoretically more than is needed for child support ($6,178 + $5,641),[7] and so the remainder of $13,552 could be designated as spousal maintenance or saved for postsecondary education if the transfer of income were completed.

The weaknesses of poverty level guidelines as indicators of income needs also apply to the present study. Poverty levels do not allow for variations in income needs by age of children or gender composition of families. The poverty level considers only current money income and ignores year-to-year changes in income, as well as assets, fringe benefits, and non-money incomes. The "increases in poverty level incomes over the years have not increased at the same rate as the median income of families" (Orshansky 1968, p. 6). Thus, the poverty level incomes are increasingly below median incomes for families of the same size.

Despite these limitations, the use of income-to-needs ratios to compare the income equivalence of two households is important in decision-making processes during divorce. When used with discretion, the calculations provide valuable information to assist mediators, attorneys, and judges in evaluating the equity of the settlement. Education of attorneys and judges in the use of these calculations can occur informally, in speeches (Rettig 1987b), in more formalized educational settings (Rettig 1987a), through legal publications (Rettig & Christensen 1988), in research reports (Rettig et al. 1989), and in public testimony (Christensen 1988; Rettig 1988). Worksheets have also been used as an educational method with some success in other states (Beninger & Smith 1988). The most effective education may be for judges to teach themselves.[8] The educational sessions need to include discussions of the limitations of the methodology as well as the values and assumptions underlying its use.

Assumptions of the Methodology

The use of income equivalence calculations within the current system of child support guidelines gives a judge some justifiable reasons for deviating upward or downward from the guidelines when awarding child support. The objective calculations outline differences in levels of living for the two households and thus aid attorneys and mediators in negotiation and judges in the decision making process. If the methodology were adopted as a public policy and used as a decision rule for most cases, then child support guidelines would no longer be needed. It is unlikely that the policy will be changed in the near future, but the use of the methodology as a decision guideline also involves using different assumptions about division of resources at divorce.

Those who feel child support guidelines should be consistently and rigidly enforced and judges should have less discretion in individual cases may disagree with the comparison of income equivalence across households. The methodology allows more judicial discretion in each case by calculating income needs for each household and making individual decisions based on other relevant factors in that particular situation. The value of uniformity across cases at the same income level is sacrificed for the value of equality between custodial and noncustodial parents of the binuclear family.

[6]See also Williams (1985, p. 33). The estimates of expenditures on children as a proportion of net income as calculated from Espenshade (1984) are: for low socioeconomic status, one child was 25.6%; for two children 39.7%; and three children 49.7%. The addition of the expenditure needed for the caretaker parent makes the percentages in Table 3 seem reasonable.

[7]Family Economic Review (1987), "Updated Estimates of the Cost of Raising a Child, 2: 36.

[8]We have appreciated the interest of Judge Mary Louise Klas, who has talked about our methodology in both legal and judicial educational settings, has advanced our techniques, extended the worksheet to include spousal maintenance calculations, and is presently working on computerizing the calculations for ease of use in the courtroom.

TABLE 4. Worksheet Determining Income-to-Needs Ratios for Two Households After Transfer of Child Support[a]

		Custodial Parent Household	Non-Custodial Household
1.	Yearly net income: (\$596 x 12) (\$3706 x 12)	\$ 7,152	\$ 44,472
2.	Child support amount (guidelines or previously-ordered): (\$750 per month x 12)	+ 9,000	9,000
3.	Net income after adding c/s to custodial and subtracting c/s from non-custodial:	\$16,152	\$35,472
4.	Poverty level for each household size:[b] 2 no. of children	9,120	5,360
5.	Income-to-needs ratio: (line 3 ÷ line 4 and include 2 decimal places	1.77 R1	6.62 R2
6.	Difference in ratios: (subtract R1 from R2)	\$ -4.85	
	Adjust income transfer amount if difference is not zero. (Zero equals income equivalence.)		
7.	Yearly net income-both: (total line 1)	\$ 51,624	
8.	Poverty level income-both: (total line 4)	\$ 14,480	
9.	New household size poverty level as % of total poverty level: (line 4 ÷ line 8)	63 %	37 %
10.	Income for new household size: (line 9 x line 7)	\$32,523.12	\$19,100.80
11.	New income-to-needs ratio: (line 10 ÷ line 4 to 2 decimal places)	3.56	3.56
12.	Income transfer to equalize: (line 10 - line 1) (line 1 - line 10)	\$25,371.12	-\$25,371.12
13.	Equalized amount per month: (line 12 ÷ 12 months)	\$ 2,114.26	

[a]Kathryn D. Rettig, Ph.D., Associate Professor, and The Honorable Mary Louise Klas, Judge of the Second District Court of Minnesota (1989).

[b]The poverty level income guidelines change each year. The 1989 guidelines by household size are: 1 = \$5,980; 2 = \$8,020; 3= \$10,060; 4 = \$12,100; 5 = \$14,140; 6 = \$16,180; 7 = \$18,220; 8 = \$20,260. Add \$2,040 for each additional member over 8 (Federal Register, 54(31), 7097-7098).

The methodology of equalizing household incomes by size dramatically changes previously held assumptions for income allocation at divorce, and these changes need to be stated explicitly. Child support has been viewed as income for meeting the needs of the child(ren) and not for supporting the custodial parent. However, the present methodology with its value placed on equality forces the noncustodial parent to share more income. Personal income after divorce is treated more like community property as long as there are minor children present. Raising the children becomes the responsibility of the "community" (couple) and would be treated more like an economic partnership which is not dissolved at divorce.

This income equivalence methodology treats the human capital assets of a marriage in a similar way to the financial and physical capital assets of the marriage. The division of nonmarital real property at divorce can be used as an example. The "appreciation in the value of nonmarital real property remains nonmarital at the time of divorce, but the income from the property is considered marital" (McCullogh 1989, p. 131). Similarly, the value of the professional degree which is a personal human capital asset, would remain nonmarital, but the income valued at the time of divorce would be considered marital at least until the child(ren) reach majority. The value of the professional degree as an asset is "the present value of the anticipated future earnings" (Parkman 1987, p. 467) and the value of the income is the amount of net income the year of the divorce. The human capital assets of the marriage would then be treated with the same division rules and with as much respect as the financial and physical capital assets. The allocation of income at divorce by the income equivalence methodology would signify that people matter as much as money and that investments in children are an important responsibility for both parents.

The income equivalence methodology also changes the basic premises for awarding spousal maintenance. The family income is viewed from a systems perspective, with the assumption that past decisions about earning income and about labor force participation were joint rather than individual decisions. A family decision for one adult to remain home with the children, rather than to enter the labor force, carries with it an implied income protection contract. The implicit contract protects the spouse who is investing in the human capital assets of partner and children rather than in self. The awarding of spousal maintenance income after the children reach the age of majority can thus be justified as fulfilling the implicit income protection contract. The earning capacity of the person who stayed out of the labor market has been permanently reduced by the family decision to invest in others rather than in this adult. The rights to income equivalence between households have been earned by this past sacrifice, at least for a period of time following divorce.

The income equivalence calculations do provide a means for comparing levels of living for households of different incomes and sizes. Child support awards can be established so that the disparity in levels of living between custodial and noncustodial parents after divorce are reduced. This is a change consistent with the request made by the Minnesota Supreme Court Task Force on Gender Fairness in the Courts (1989, p. 22) and a change for the better in regard to the economic well-being of children from divorced families.

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