A STANDARDIZED NET INCOME SHARES MODEL TO DEVELOP BASIC CHILD SUPPORT GUIDELINES

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ABSTRACT

Research regarding child support typically focuses on the effects of child support awards and its underlying principles within child support models. However, researchers have invested little effort in the analysis of child support guideline comparisons or in the development of analyses to determine whether state adopted guidelines seem reasonable based on state-specific macroeconomic variables.   This analysis intends to develop a model to determine the reasonableness of child support guidelines for states that use the income shares method based on the net income of both parents. Further, it intends to suggest that the development of a standard model is possible and, to a certain extent, needed, to obtain interstate uniformity. Findings suggest that the implementation of such a model could lead to more equitable and uniform basic child support awards.

KEYWORDS: Child Support, Basic Child Support Awards, Income Shares Model, Forensic Accounting, Family Law

JEL: D11, D31, H31, K36, M49, M59

INTRODUCTION

Child support regimes have a vital influence on the well-being of children around the world. In the United States of America (USA), increasing divorce rates, unplanned parenting and out of wedlock pregnancies have presumably led to a surge in single parent households. According to the United States Census Bureau, as of 2007, about 26.3% of all children in the USA live with one parent while the other lives elsewhere and 13.7 million single parents have custody of about 21.8 million children under 21. Furthermore, 53% of custodial parents worked full-time yet nearly 25% of custodial parents had incomes below the poverty level. Finally, even though child support due nationally totaled about $34.1 billion, only 63% of the amounts due were paid on time and 53.2% of custodial parents did not receive all of the support due. The selected statistics summarized above lead to one unquestionable conclusion; that is, child support is an essential component of our lives and one of the most important factors in the development of our children. Thus, the development of child support guidelines is a major public policy concern that, even though tailored to the particular needs of every region, should certainly consider empirical results without each specific jurisdiction. Nonetheless, the literature contains no single attempt to develop a standardized formula for the development of child support guidelines. As such, and given the absence of formula standardization efforts, this analysis intends to develop a formula that may help policymakers ascertain the reasonableness of guidelines based on personal per capita income. This paper provides an introduction to the available literature in the subject, as a basis for the model that we are proposing. It then summarizes the data used and the methodology implemented to develop a standardized child support guideline development formula as well as the related results and conclusions.

LITERATURE REVIEW

The United States Congress recognizes the sovereign nature of states in regards to the design and implementation of child support regimes. Nonetheless, in order to incentivize the development of uniform intra-state child support standards, it approved the 1988 Family Support Act, which mandated states to develop numerical guidelines for the adjudication of child support awards. Further, it required

that the guidelines establish a rebuttable presumption that the amount derived as child support from their application is correct (Bieniewicz, 1999). States, which almost immediately adopted guidelines, mainly use one of two generally accepted methods to determine child support awards namely, "Percentage of Obligor's Income" or "Income Shares". Despite these efforts, deviations from the guidelines are still relatively common, particularly in low-income families and in high-income families. (Brinig and Allen, 2010). Under the Percentage of Obligor's Income approach ("POI"), basic child support awards are based on the non-custodial parent's income and the number of children to be supported. For child support purposes, gross income generally includes income from all sources (a generally broad definition). On the other hand, net income typically refers to gross income less mandatory deductions (i.e. income tax withholding, FICA withholdings, and other government required withholdings) and other allowable deductions (insurance policy premiums, provided the minor or minors are beneficiaries, and contributions to pension plans, among others). Thus, the approach does not consider the custodial parent's income except as required for the allocation of special expenses, including, inter alia, education and medical expenses. The percentages applied to the non-custodial parent's income vary by State and are based on each state's policymakers' assessment of child rearing expenses (US House of Representatives, 1996).

On the other hand, States that use the Income Shares ("IS") approach estimate basic child-rearing expenses based on the application of a percentage to the combined income of both parents and the allocation of that result between the parents based on their respective incomes, gross or net. The underlying groundwork supporting the IS model is that children should receive the same proportional share of parental income had the family stayed intact (Beyer, 1991). The percentage applied in these states then represents an estimate of basic child-rearing expenses for a specific combined income level.

The use of the POI approach or model does not seem to protect children's rights as every child has an inalienable right to receive, from each parent, an adequate amount of support. The absence of the custodial parent's income in the determination of the basic child support awards points to an inherent inconsistency as both parents should contribute to all child-rearing expenses. The IS model, however, incorporates the income of both parents in the calculation of basic child-rearing expenses thereby safeguarding children's rights. States that establish basic child support awards based on gross income do not consider that citizens should pay income taxes, contribute to the Social Security system, plan for retirement and provide for their own health. Thus, models that use net income as the primary variable in basic child support adjudication lead to more realistic and reasonable estimates of parents' child support obligations. Percentages applicable to gross income may certainly be lower than those applicable to net income but this still does not consider possible differences in the taxation of the different types of income, which then seems to favor the use of net income rather than gross income for child support adjudication.

Even though the models or approaches seem straightforward, courts may use discretion in deviating from the guidelines, particularly in high-income cases. The lack of clarity within state designed and implemented methods, as well as deviation processes, may lead to inconsistent child support awards in different cases with similar fact patterns (Nelson, 2011). Thus, child support awards for parents with similar income from different states or different regions of a state may be significantly dissimilar. (Raatjes, 2011). Child-support regulations fall outside the scope of Congress' constitutional powers yet federal intervention in child support guideline development has promoted the application of empirical evidence to support estimates. Essentially, Section 302.56(h) of Title 45 of the Code of Federal Regulations provides that "[a]s part of the review of a State's guidelines…, a State must consider economic data on the cost of raising children and analyze case data, gathered through sampling or other methods, on the application of, and deviations from the guidelines. The analysis of the data must be used in the State's review of the guidelines to ensure that deviations from the guidelines are limited." As such, in addition to promoting the use of actual data, the federal government promotes the development of guidelines that lead to a limited number of cases in which deviations from the guidelines would be appropriate. Thus, the mandate's rationale is to promote uniformity and fairness.

The conundrum of calculating fair and equitable child support awards has been, continues to be, and most certainly will continue to be, one of the main issues in Family Courts across the United States, and, foreseeably, the world. Forensic Accountants, Forensic Economists, Lawyers, Judges, Policymakers, parents and children are all stakeholders in all analyses related to child support as they all have an inherent interest in the insertion of justice, reasonableness and equality within child support regimes. However, given the varying degrees of complexity in the guidelines and the use of different approaches, the implementation of uniform formulas seems to resemble a Holy Grail or an unreachable goal. The complexity of the guidelines, the differences in implementation mechanisms and the constitutionally supported absence of specific federal intervention in the development of guidelines leads to a dramatically heterogeneous structure that promotes lack of uniformity and increased controversy. (Pirog-Good and Brown, 1996). The concomitant principle underlying each state's guidelines provides that the established percentages intend to estimate actual child-rearing expenses. All of the models used to adjudicate child support awards are somehow linked to estimates of child-rearing expenditures.

Therefore, even though there is no actual consensus about the most appropriate or valid model to develop the estimates, the percentages used are, or should be, the result of economic research on child rearing costs (Williams, 1994). The use of a mathematical equation provides a reasonably straightforward manner to estimate child-rearing expenses. In Kansas, the processes to develop the basic child support award table or guideline incorporated the use of a logarithmic equation that considers the decrease of child-rearing expenses as a percentage of income. In order to quantify the basic child support award as a percentage of income considering the level of family income, states stratify the population of families based on income levels and then develop estimates of expenditures on children as a function of family income. These efforts typically rely upon individual household data gathered by the Census Bureau on behalf of the Bureau of Labor Statistics in the Consumer Expenditure Survey. Essentially, "expenditures functions contained in these studies involve what in mathematics is called a power function, or, a function that is linear in logarithmic form. [The function then allows policymakers] to use expenditure survey data that has already been grouped into income classes by family size in the interest of updating the child support schedules." (Terrell and Messer, 2009).

Empirical research demonstrates that child-rearing expenses are higher as a percentage of income, obligor only or combined, at lower income levels whereas they are lower at higher income levels. (Garfinkel, I. and Melli, 1990). Thus, child-rearing expenses vary depending on the level of available family income leading to the alluded "power function". This phenomenon, which is known as Engel's Law, has been embraced by conservative economists such as Milton Friedman and by liberal economists such as John M. Keynes. (Friedman, 1957). The decrease in child-rearing expenses as a percentage of income when income increases, has also been recognized by most states. The application of said principle has led to guidelines that provide for a decrease in the ratio of basic child support awards to income as the latter increases (Betson, 1990). The evidence seems to suggest that the ratio of child-rearing expenses to income arises out of a logarithmic function as policymakers consider Engel's law in developing guidelines. Some states have established a type of income ceiling in their guidelines to avoid child support awards that lead to the unjust enrichment of custodial parents. For instance, the Florida child support guidelines provide for basic child support awards for combined income levels of up to $10,000. Once combined monthly incomes reach this threshold, a flat rate applies, much lower than that applicable to the $10,000 combined income level. Pursuant to the Florida guidelines, if the parties in a child support case have a combined net monthly income of $12,000, then a rate of 14.37% applies to the first $10,000 of combined income, whereas a 5% rate applies to the combined income exceeding $10,000, without a specific limit. Some Courts may question even the Florida approach for high-income cases, as the "power function" principle should be followed, even in deviations from the guidelines for cases where the obligor's income exceeds the income ceiling. For instance, the Connecticut Supreme Court remanded a case for further proceedings as the trial court ordered a high income obligor to share a fixed percentage of his annual bonus as part of his child support obligation (Maturo v. Maturo, 296 CR 113 (2010)). The

opinion established that, even though the trial court has ample discretion in awarding child support, the application of a fixed percentage to the non-custodial parent's bonus violates the spirit of the guidelines. The Court described the trial court's judgment as "an open-ended, variable child support award that constituted an increase, rather than a decrease, in the percentage of the parties' combined net weekly income over that established for families at the upper limit of the guidelines' schedule." (Maturo v. Maturo, supra). In reaching its conclusion the Court interpreted the applicable guidelines, which are based on the IS model, and asserted that an increase in the support obligation is not necessarily equitable merely because the noncustodial parent has a higher earnings capacity. Specifically, the Court held that children's needs, as a percentage of income, do not increase automatically and at the same rate whenever household income increases; on the contrary, even the guidelines' preamble states that empirical research demonstrates that spending on child-rearing expenses, as a percentage of family income, decreases as a as that income increases. As such, "families at higher income levels do not have to devote most or all of their incomes to perceived necessities. Rather, they can allocate some proportion of income to savings and other expenditures as well as discretionary adult goods.'' (Maturo v. Maturo, supra).

Based on the above, even though the determination of the award lies in the judge's discretion, the application of a formula, albeit modified, is encouraged. (Lori, 2011). In Weinstein v. Weinstein, 62 So. 3rd 878 (2011), the Louisiana Court of Appeals explained why the determination of child support awards based on the guidelines is presumptively correct but not infallible. The court concluded that the percentage applicable to the highest income levels in the guidelines may not be merely extrapolated to establish the basic child award in cases where income exceeds the guidelines' ceiling. The Court concluded, "that simple extrapolation of the guidelines, without considering the child's needs, is not an acceptable method…The support for a child or children of a more affluent lifestyle, as in this case, is a concern for the courts to address on a case by case method. We find by simply extrapolating from the guidelines without concern and discretion by the court in balancing the needs and lifestyle of the child or children, could lead to excessive child support awards." (Weinstein v. Weinstein, supra).

Given that each state should consider economic data in the development of guidelines, a model based on the interstate differences of one macroeconomic variable that incorporates or measures the average intrastate level of income should provide a tool to evaluate and ponder basic child support awards. Variations in per capita personal income, a highly accessible measure of mean income within a certain economic aggregate, could very well provide a standardized measure to develop a uniform model that incorporates measures of state developed child rearing expense estimates as a function of a macroeconomic variable that considers differences in economic conditions between states.

THE MODEL, DATA AND METHODOLOGY

There is certainly not an absolute or universal mathematical formula to adjudicate basic child-support awards in all cases. Nonetheless, the existence of possible deviations from the guidelines as well as the absence of a uniform evaluation system leads to inconsistent results in the child support arena. However, the conceptual framework summarized above leads to a very simple yet powerful inference; given that state guidelines incorporate (or should incorporate) a basic economic principle, Engel's Law, a formula extrapolated from the application of guidelines to income levels should lead to a uniform basic child-rearing expense estimation model. Said model should include a macroeconomic variable that represents State-specific conditions. As mentioned above, child support stakeholders lack a tool to determine whether state specific guidelines are reasonable. Further, even though States have had over two decades of experience in developing estimates of child-rearing expenses, no single specific attempt has been made to delineate a uniform formula, adjusted to fit the economic particularities of each State, or to create a tool to determine the reasonableness of specific state guidelines. However, given that States have had ample experience in establishing child support guidelines and that the guidelines must be based on underlying economic data, current guidelines should provide reasonably accurate estimates of basic child-rearing

expenses. The underlying assumption in this analysis is that an aggregate result of the application of the actual guidelines should lead to a reasonable estimate of the relationship between child-rearing expenses and a state specific macroeconomic variable; namely, per capita personal income. If this were not the case, then we would acknowledge that, after almost twenty-three years of the adoption of the 1988 Family Support Act, state policymakers have developed completely erroneous estimates. As such, we obtained the observations used to develop our formula from actual State specific guidelines.

Structural differences in state guidelines, such as the specific definitions of income, net or gross, special items, medical expenses and childcare costs, and maximum presumptive child support awards make the development of a standardized formula virtually impossible. However, this analysis suggests that the basic child support awards, as a percentage of per capita personal income, has a solid logarithmic relationship amongst the guidelines. Thus, the findings lead us to believe that it is possible to develop a uniform formula as long as it is adjusted for state specific conditions. Guidelines that follow the IS model use either gross or net income as the basis to establish child support awards.

The use of gross income leads to lack of uniformity, as it does not consider income available after taxes. For instance, a parent with $40,000 in annual income from salaries and wages is worse off than a parent with $40,000 annual income derived from federally tax-exempt interest income or income taxed at favorable rates. The parent that received income from salaries and wages is subject to income and social security taxes, whereas the parent who receives all income from fully exempt sources has higher aggregate disposable income. Nonetheless, if gross income, rather than net income is used in the application of specific percentages, both parents will probably be responsible for similar support amounts, yet their financial circumstances are significantly different. Therefore, the IS method based on net income rather than gross income promotes fairness as well as increased uniformity in award adjudication.

Table 1: Income Share States

State	Basis of Income	PCPI ($)	State	Basis of Income	PCPI ($)
Alabama	G	2,825	Nebraska	N	3,288
Arizona	G	2,910	New Jersey	N	4,226
California	N	3,583	New Mexico	G	2,810
Colorado	G	3,554	New York	G	4,067
Connecticut	N	4,661	North Carolina	G	2,961
Florida	N	3,265	Ohio	G	3,033
Georgia	G	2,952	Oklahoma	G	3,027
Idaho	G	2,681	Oregon	G	3,085
Indiana	G	2,908	Pennsylvania	N	3,427
Iowa	N	3,186	Rhode Island	G	3,549
Kansas	G	3,304	South Carolina	G	2,757
Kentucky	G	2,775	South Dakota	N	3,230
Louisiana	G	3,197	Tennessee	G	2,937
Maine	G	3,109	Utah	G	2,705
Maryland	G	4,076	Vermont	N	3,355
Massachusetts	G	4,291	Virginia	G	3,719
Michigan	N	2,969	Washington	N	3,620
Minnesota	G	3,565	West Virginia	G	2,718
Missouri	G	3,078	Wyoming	N	3,979

Table 1 enumerates all states that use the income shares approach. States that apply the IS percentages to combined gross income have been identified as G whereas states that apply the percentages to net income have been identified as N. It also includes the monthly per capita personal income (PCPI) for each State based on data from Table SA04 of the U.S. Bureau of Economic Analysis, State Annual Personal Income, as revised on March 23, 2011.

This analysis focuses only on states that base basic child support award adjudication on the IS approach using the parents' net income. Thus, we first segregated the population of 39 states that use the IS approach between those that apply percentages for basic child-rearing expense estimate development to gross income and those that apply it to net income ("NI"). (Table 1). The data used to determine whether the selected guidelines are based the IS shares model and either gross or net income was obtained through an author performed analysis of each states' guidelines.

The analysis incorporates guidelines for all IS–NI states except California as its specific model requires application of different variables, including who is the highest earner between the parents and poverty or high-income adjustments. Inclusion of these variables makes it impractical to incorporate California guidelines in the analysis, as the objective is to develop a formula that standardizes basic child support awards considering a macroeconomic indicator. The remaining eleven states that use the IS model do not incorporate additional variables. After identifying the States with guidelines based on IS-NI, we calculate state specific basic child support awards for parental combined income levels from $2,000 per month to $12,000 per month, at $100 increments for one to five children. Calculations were based on each state's applicable December 31, 2010 guidelines. We estimated basic child rearing expenses for each IS-NI State in selected combined NI intervals based on related guidelines. Appendix I summarizes the estimates of aggregate basic child rearing expenses, per combined NI interval, as calculated here. The first row provides the aggregate basic child support obligation for the 11 IS-NI states if the parental combined net income amounts to $2,000 per month. Given that there are 11 states NI-IS states, the first parental combined net income (CNI) level amounts to $22,000. The summation of the corresponding basic child support award for one child of each of the 11 States amounts to $5,329.

The rationale for a $2,000 combined monthly net income floor lies on the assumption that, within the general population, a person must earn no less than $7.25 per hour, the U.S. federal minimum wage as of June 30, 2010, which translates into approximately $1,255.70 of gross monthly income. It follows then, that the monthly minimum combined parental gross income, within the average U.S. population should amount to at least $2,511.40. Thus, the $2,000 floor in the analysis provides for the inclusion of average low earners. On the other hand, the rationale for the $12,000 ceiling lies on the use of limits on combined NI in several of the IS-NI states. Essentially, most guidelines in IS states provide for a ceiling on presumptive child support based on the economic theories discussed earlier. In most cases, once parental combined income reaches a certain level, the guidelines allow the judge to apply equity considerations to justify any increase in the awards. However, in certain cases, such as Florida, once the combined net income reaches a certain amount, a very low flat rate is applied to NI in excess of the ceiling to award additional basic child support. Given that this analysis aims to develop a general formula to evaluate reasonableness, a $12,000 ceiling provides sufficient coverage to include the high-end of the middle class.

Once basic child rearing expenses for each income level had been quantified, we obtained 2010 monthly per capita personal income data for each IS State from Table SA04 of the U.S. Bureau of Economic Analysis, State Annual Personal Income, as revised on March 23, 2011. (Table 1). The basic child rearing expense per our calculations (Appendix I) was then used to calculate child-rearing expense estimates for each combined NI level as a percentage of combined NI for 1 to 5 children. To incorporate macro-economic variables chosen for this analysis, we calculated the combined NI levels as a percentage of aggregate per capita personal income. Appendix II summarizes the analysis results. As depicted in Appendix II, in the aggregate of the 11 IS-NI states, when combined monthly parental income amounts to 56.11% of the state's PCPI, child-rearing expenses for one child are estimated at 24.22% of CNI. The author also performed these calculations to develop the formula. Finally, we generated regression analyses for each quantity of children to obtain a logarithmic equation that bases basic child-rearing expense estimate for IS-NI states on the relationship between parents' combined monthly NI and monthly per capita personal income. The proposed model is the following:

$$y = a\ln(x) + c \tag{1}$$

Where:

y = Percentage of basic child rearing expenses applicable to the income level engrained in the independent variable x.

x = Specific Combined Income Level ($) / Monthly Per Capita Personal Income.
a = Coefficient.
c = Intercept.

RESULTS

The regression analyses performed for each quantity of children in the household led to the following coefficients and intercepts to be incorporated in the formula described above.

Table 2: Model's Coefficients and Intercepts**

Number of Children	A	C	R^2
1	-0.068	0.2165	99.20%
2	-0.102	0.3154	99.24%
3	-0.125	0.3752	99.19%
4	-0.138	0.4196	99.02%
5	-0.149	0.4589	98.91%

Table 2 summarizes the coefficients (a) and intercepts (c) derived from the regression analyses performed based on the data obtained in the analysis documented in Appendix II. Refer to Appendix III for regression analyses results in graphical form.

As expected, the model's coefficient in every category is negative, suggesting an increase in combined NI, leads to a decrease in the percentage applicable to estimate basic child-rearing expenses. Thus, the model validates that Engel's Law is intertwined in the IS-NI model estimates. Further, given the model's R^2 exceeds 98% for all households with 1 to 5 children, it follows the model has statistically predictive value. Nonetheless, to determine whether the formulas obtained from the regression analyses lead to reasonable estimates of the guidelines' percentages, we applied the formulas to each State considering the relationship between each state's per capita personal income and the specific level of combined NI for which we generated an estimate. The R2 measures derived from our analysis, as depicted in Table 3, suggest the model leads to results that resemble the guidelines. Thus, application of the model to each State per capita personal income measures suggests the model has predictive value. For instance, the logarithmic relationship of basic child support obligation applicable to one child in Connecticut based on our model and the one derived from the actual Connecticut guidelines reflects a 96.49% R2.

Table 3: R-Square of Relationship between Model Application Results and Actual Guidelines

State	R-Square % (1 Child)	R-Square % (2 Children)	R-Square % (3 Children)	R-Square % (4 Children)	R-Square % (4 Children)
CT	96.49	97.11	97.11	97.36	97.34
FL	93.97	93.84	94.08	94.03	93.85
IA	98.23	93.83	96.96	94.01	90.44
MI	99.91	99.72	99.88	99.89	99.75
NE	98.76	98.39	98.49	96.00	93.99
NJ	96.68	97.10	97.27	97.28	97.27
PA	98.22	98.18	98.11	98.11	98.10
SD	98.81	98.75	98.80	98.75	98.74
VT	96.65	96.86	97.41	97.41	97.41
WA	86.65	86.19	86.08	83.28	83.13
WY	99.22	99.08	98.65	98.99	98.99

Table 3 specifies the R-square derived from the relationship between the results of the application of our model to each State and the actual guidelines for each amount of children receiving support. The logarithmic relationship of the basic child support obligation applicable to one child in Connecticut based on our model and the one derived from the actual Connecticut guidelines reflects a 96.49% R-Square.

According to our analysis, the models developed for one to five children provides reasonable estimates of child-rearing expenses. Essentially, the lowest R-Square obtained amounted to 83.13%, State of Washington for five children. Thus, even though we did not calculate the t-statistic for each result, the mere fact that the application of the models to each of the 11 States for each quantity of children led R-Square measurements in excess of 65% suggests the models have statistically significant predictive power. The independent variable in our analysis, the relationship between the combined NI and the state-

specific per capita personal income, provides a sound macroeconomic variable to explain differences in child-rearing expense estimates within the 11 IS-NI states. However, that fact does not entirely explain whether there is some relationship between the differences in the model results and guideline percentages and the difference between the state-specific per capita personal income and the average per capita personal income for the 11 IS-NI states.

The underlying questions are whether over-average state-specific per capita personal incomes lead to higher or lower basic child rearing expense estimates. As depicted in Table 4, our model leads to higher percentage estimates of child-rearing expenses than those in related guidelines for States with over-average per capita personal income and vice-versa. For example, Connecticut enjoys a monthly per capita personal income of $4,661, 30.77% higher than the 11 ID-NI states' average of $3,564. Our model for one child, applied to Connecticut for monthly combined NI levels of $2,000 to $12,000 in $100 increments, leads to aggregate differences of 88.97 percentage points when compared to the guidelines. In other words, the summation of the residuals derived from the differences between the percentage per guidelines and the model's results amounted to 88.97 percentage points. Thus, our model leads to a higher estimate of basic child rearing expenses than that engrained in the related guideline for high-income states. On the other hand, in Michigan, which has monthly per capita personal income of $2,969, or 16.70% lower than the 11 ID-NI states' average, the aggregate differences between the percentages per the guidelines and those per our model amounted to -752.55. Therefore, the model results in a lower estimate of basic child-rearing expenses than embedded in the related guidelines for low-income states.

Finally, the correlation coefficients for aggregate percentage point differences between model and guidelines, and the percentage differences between states' monthly per capita personal income and the 11 IS-NI states' average, suggest that, even though the correlations are not perfect, they do reflect a certain degree of statistical significance. Thus, although the model leads to reasonable estimates of child-rearing expenses as a percentage of combined net income, the differences noted between the model's results is attributable to the level of wealth in specific states.

Table 4: Correlation Analysis of Differences

	Sum Of Percentage Point Differences: M - G for CNI Levels From $2,000 - $12,000 In $100 Increments					
	Number of Children					
State	**1**	**2**	**3**	**4**	**5**	**% Difference AVG PCPI v. State PCPI**
CT	88.97%	320.26%	542.63%	621.24%	665.62%	-30.77%
FL	-31.04%	-233.07%	-471.95%	-546.58%	-574.60%	8.39%
IA	-65.94%	-258.31%	-36.47%	29.45%	90.45%	10.61%
MI	-16.03%	-342.43%	-776.69%	-922.21%	-752.55%	16.70%
NE	-214.20%	-286.06%	-258.21%	-413.22%	-495.78%	7.75%
NJ	-3.11%	186.92%	380.65%	442.75%	471.27%	-18.57%
PA	14.23%	50.86%	109.96%	138.01%	142.10%	3.85%
SD	0.13%	28.67%	74.48%	99.90%	102.17%	9.38%
VT	11.22%	-114.51%	161.36%	-212.89%	-243.14%	5.87%
WA	141.39%	25.30%	-153.17%	-215.08%	-215.38%	-1.57%
WY	100.40%	316.80%	533.23%	611.07%	658.10%	-11.64%
r	**-49.94%**	**-86.88%**	**-79.22%**	**-80.44%**	**-80.44%**	

Table 4 summarizes the results of our analysis of differences between the percentage of monthly combined net income used for basic child-rearing expenses per our model and that per the state-specific guidelines. It also provides the correlation coefficient between the aggregate differences of basic child rearing expense estimates and the percentage difference between state-specific per capita personal income and the average per capita personal income for the 11 IS-NI states.

CONCLUDING COMMENTS

Family relations, including child-support related disputes, will continue to puzzle all stakeholders. Human nature, and the policies and processes in place to promote economic fairness are and must remain malleable. However, a higher degree of stability and uniformity within child-support related policies will certainly lead to a higher level of fairness, which should provide increased harmony. This analysis

validates that it is possible to develop a uniform formula to estimate basic child-rearing expenses and to provide for the inclusion of variables that consider state-specific elements in the design of uniform guidelines. The use of a logarithmic model, the alluded "power function", acknowledges Engel's Law; essentially, that as income increases, the percentage of said income consumed decreases.

However, the assessment and analysis herein documented may be expanded. As such, other research matters and objectives could be addressed from an economic and statistical standpoint. First, even though States that use the IS approach based on gross income do not recognize that income taxes and other deductions and obligations decrease income in unequal basis, this analysis may be emulated for states that use gross income rather than net income. Second, while results may not necessarily vary significantly, some kind of population-based weighted-average of child-rearing expense estimates could be developed in order to provide increased, albeit marginal, certainty to the model. Furthermore, the inclusion of state-specific poverty levels and/or percentage of welfare recipients in the model may lead to increased accuracy and to explanations for the differences in inter-state child-rearing expense estimates. Finally, further analysis may be performed to identify factors that explain the reason for the gap noted between the estimates generated by the model and actual state-specific guidelines. Specifically, said additional research should lead to the identification of factors or variables that might help to explain the gap noted in richer and poorer states. All parents have a moral, natural and legal obligation to provide for their progeny. This responsibility not only encompasses financial support but also love, guidance, care, and attention. Child-support regimes must therefore lead to the adjudication of fair child-support awards and not to the implicit tolerance of an unjust enrichment to either the obligor or the custodial parent.

APPENDIX

Appendix I: Aggregate Basic Child Rearing Expenses for the 11 IS-NI States

CNI US$	NUMBER OF CHILDREN				
	1	2	3	4	5
22,000	5,329	7,803	9,244	10,277	11,182
23,100	5,590	8,169	9,744	10,791	11,736
24,200	5,827	8,546	10,223	11,334	12,328
25,300	6,075	8,895	10,661	11,844	12,879
26,400	6,320	9,251	11,084	12,333	13,416
27,500	6,560	9,598	11,501	12,797	13,940
28,600	6,793	9,934	11,897	13,223	14,432
29,700	7,021	10,262	12,287	13,656	14,901
30,800	7,252	10,612	12,698	14,104	15,389
31,900	7,472	10,919	13,059	14,519	15,850
33,000	7,669	11,204	13,391	14,910	16,271
34,100	7,873	11,479	13,703	15,280	16,683
35,200	8,061	11,743	14,019	15,654	17,090
36,300	8,245	11,994	14,300	15,997	17,463
37,400	8,421	12,272	14,618	16,375	17,876
38,500	8,589	12,506	14,890	16,701	18,239
39,600	8,746	12,734	15,156	17,024	18,586
40,700	8,905	12,964	15,418	17,341	18,945
41,800	9,061	13,198	15,690	17,646	19,300
42,900	9,234	13,449	15,983	17,979	19,682
44,000	9,398	13,691	16,263	18,291	20,048
45,100	9,546	13,902	16,506	18,562	20,370
46,200	9,685	14,095	16,726	18,809	20,667
47,300	9,818	14,278	16,940	19,052	20,941
48,400	9,945	14,453	17,139	19,276	21,185
49,500	10,069	14,622	17,332	19,494	21,431
50,600	10,191	14,796	17,523	19,711	21,668
52,800	10,444	15,136	17,917	20,155	22,160
53,900	10,569	15,310	18,116	20,385	22,409
55,000	10,687	15,481	18,320	20,602	22,649
56,100	10,808	15,647	18,513	20,820	22,887
57,200	10,926	15,809	18,703	21,039	23,129
58,300	11,055	15,982	18,904	21,263	23,380
59,400	11,167	16,151	19,097	21,482	23,617
60,500	11,285	16,314	19,282	21,693	23,852
61,600	11,401	16,473	19,469	21,901	24,079

62,700	11,517	16,630	19,651	22,109	24,308
63,800	11,626	16,789	19,836	22,311	24,535
64,900	11,740	16,949	20,017	22,516	24,751
66,000	11,854	17,110	20,202	22,723	24,977
67,100	11,964	17,274	20,384	22,927	25,199
68,200	12,072	17,430	20,567	23,127	25,415
69,300	12,183	17,592	20,755	23,334	25,641
70,400	12,301	17,763	20,954	23,553	25,881
71,500	12,427	17,939	21,154	23,783	26,133
72,600	12,542	18,108	21,351	24,003	26,373
73,700	12,660	18,277	21,547	24,220	26,606
74,800	12,775	18,444	21,735	24,434	26,835
75,900	12,891	18,603	21,930	24,642	27,067
77,000	13,004	18,769	22,113	24,855	27,295
78,100	13,124	18,939	22,310	25,073	27,535
79,200	13,236	19,095	22,482	25,272	27,732
80,300	13,340	19,248	22,655	25,471	27,966
81,400	13,451	19,409	22,837	25,669	28,196
82,500	13,562	19,559	23,008	25,870	28,412
83,600	13,671	19,710	23,183	26,070	28,624
84,700	13,791	19,875	23,366	26,280	28,856
85,800	13,898	20,028	23,542	26,480	29,072
86,900	14,006	20,182	23,716	26,678	29,292
88,000	14,111	20,332	23,889	26,878	29,510
89,100	14,219	20,485	24,063	27,078	29,722
90,200	14,328	20,635	24,238	27,275	29,943
91,300	14,442	20,796	24,422	27,483	30,169
92,400	14,547	20,944	24,589	27,678	30,380
93,500	14,656	21,096	24,761	27,873	30,595
94,600	14,757	21,238	24,919	28,060	30,796
95,700	14,852	21,375	25,080	28,242	30,994
96,800	14,949	21,513	25,231	28,416	31,183
97,900	15,048	21,644	25,389	28,593	31,389
99,000	15,149	21,790	25,555	28,784	31,602
100,100	15,241	21,918	25,707	28,958	31,789
101,200	15,333	22,049	25,861	29,135	31,979
102,300	15,426	22,176	26,012	29,311	32,172
103,400	15,520	22,311	26,167	29,484	32,360
104,500	15,616	22,440	26,322	29,663	32,555
105,600	15,714	22,586	26,488	29,851	32,764
106,700	15,810	22,712	26,635	30,026	32,943
107,800	15,905	22,836	26,776	30,186	33,125
108,900	15,995	22,963	26,920	30,349	33,304
110,000	16,087	23,087	27,055	30,512	33,479
111,100	16,183	23,212	27,196	30,671	33,660
112,200	16,279	23,352	27,353	30,850	33,853
113,300	16,371	23,472	27,492	31,008	34,026
114,400	16,467	23,596	27,632	31,170	34,206
115,500	16,557	23,720	27,776	31,330	34,381
116,600	16,641	23,841	27,911	31,490	34,553
117,700	16,731	23,955	28,041	31,648	34,717
118,800	16,822	24,088	28,195	31,806	34,906
119,900	16,911	24,207	28,331	31,977	35,082
121,000	16,999	24,322	28,466	32,139	35,251
122,100	17,084	24,442	28,604	32,292	35,426
123,200	17,168	24,564	28,742	32,449	35,596
124,300	17,260	24,680	28,878	32,608	35,771
125,400	17,351	24,808	29,023	32,777	35,957
126,500	17,429	24,922	29,154	32,930	36,122
127,600	17,511	25,035	29,284	33,080	36,289
128,700	17,595	25,151	29,416	33,236	36,453
129,800	17,682	25,279	29,560	33,399	36,635
130,900	17,773	25,405	29,713	33,572	36,823
132,000	17,862	25,529	29,858	33,741	37,007

Appendix I summarizes the summation of the basic child rearing expenses for each of the 11 IS-NI states for monthly combined net income from $2,000 to $12,000 in $100 intervals. Essentially, the basic child rearing expense estimates for each of the 11 IS-NI was calculated for one child thru five children for each combined net income ("CNI") interval. Then, the resulting basic child rearing expenses, per the guidelines, was added. For example, the summation of the basic child support obligation for each of the 11 IS-NI states per the related guidelines when the combined net income amounts to $2,000 per month and there is only one child, is $5,329.

Appendix II: Aggregate Basic Child Rearing Expenses as a Percentage of Combined Net Income for the 11 IS-NI States

CNI / PCPI	NUMBER OF CHILDREN				
	1	**2**	**3**	**4**	**5**
56.11%	24.22%	35.47%	42.02%	46.71%	50.83%
58.92%	24.20%	35.36%	42.18%	46.72%	50.80%
61.73%	24.08%	35.31%	42.25%	46.84%	50.94%
64.53%	24.01%	35.16%	42.14%	46.82%	50.91%
67.34%	23.94%	35.04%	41.98%	46.72%	50.82%
70.14%	23.86%	34.90%	41.82%	46.53%	50.69%
72.95%	23.75%	34.74%	41.60%	46.23%	50.46%
75.75%	23.64%	34.55%	41.37%	45.98%	50.17%
78.56%	23.55%	34.45%	41.23%	45.79%	49.96%
81.37%	23.42%	34.23%	40.94%	45.51%	49.69%
84.17%	23.24%	33.95%	40.58%	45.18%	49.31%
86.98%	23.09%	33.66%	40.18%	44.81%	48.92%
89.78%	22.90%	33.36%	39.83%	44.47%	48.55%
92.59%	22.71%	33.04%	39.39%	44.07%	48.11%
95.39%	22.52%	32.81%	39.09%	43.78%	47.80%
98.20%	22.31%	32.48%	38.68%	43.38%	47.38%
101.00%	22.09%	32.16%	38.27%	42.99%	46.93%
103.81%	21.88%	31.85%	37.88%	42.61%	46.55%
106.62%	21.68%	31.57%	37.54%	42.22%	46.17%
109.42%	21.52%	31.35%	37.26%	41.91%	45.88%
112.23%	21.36%	31.12%	36.96%	41.57%	45.56%
115.03%	21.17%	30.83%	36.60%	41.16%	45.17%
117.84%	20.96%	30.51%	36.20%	40.71%	44.73%
120.64%	20.76%	30.19%	35.81%	40.28%	44.27%
123.45%	20.55%	29.86%	35.41%	39.83%	43.77%
126.26%	20.34%	29.54%	35.01%	39.38%	43.29%
129.06%	20.14%	29.24%	34.63%	38.96%	42.82%
131.87%	19.96%	28.95%	34.28%	38.56%	42.38%
134.67%	19.78%	28.67%	33.93%	38.17%	41.97%
137.48%	19.61%	28.40%	33.61%	37.82%	41.58%
140.28%	19.43%	28.15%	33.31%	37.46%	41.18%
143.09%	19.27%	27.89%	33.00%	37.11%	40.80%
145.90%	19.10%	27.64%	32.70%	36.78%	40.43%
148.70%	18.96%	27.41%	32.43%	36.47%	40.10%
151.51%	18.80%	27.19%	32.15%	36.16%	39.76%
154.31%	18.65%	26.97%	31.87%	35.86%	39.42%
157.12%	18.51%	26.74%	31.60%	35.55%	39.09%
159.92%	18.37%	26.52%	31.34%	35.26%	38.77%
162.73%	18.22%	26.32%	31.09%	34.97%	38.46%
165.54%	18.09%	26.11%	30.84%	34.69%	38.14%
168.34%	17.96%	25.92%	30.61%	34.43%	37.84%
171.15%	17.83%	25.74%	30.38%	34.17%	37.55%
173.95%	17.70%	25.56%	30.16%	33.91%	37.27%
176.76%	17.58%	25.38%	29.95%	33.67%	37.00%
179.56%	17.47%	25.23%	29.76%	33.46%	36.76%
182.37%	17.38%	25.09%	29.59%	33.26%	36.55%
185.18%	17.28%	24.94%	29.41%	33.06%	36.33%
187.98%	17.18%	24.80%	29.24%	32.86%	36.10%
190.79%	17.08%	24.66%	29.06%	32.67%	35.88%
193.59%	16.98%	24.51%	28.89%	32.47%	35.66%
196.40%	16.89%	24.38%	28.72%	32.28%	35.45%
199.20%	16.80%	24.25%	28.57%	32.10%	35.26%
202.01%	16.71%	24.11%	28.39%	31.91%	35.01%
204.82%	16.61%	23.97%	28.21%	31.72%	34.83%
207.62%	16.52%	23.84%	28.05%	31.53%	34.64%
210.43%	16.44%	23.71%	27.89%	31.36%	34.44%
213.23%	16.35%	23.58%	27.73%	31.18%	34.24%
216.04%	16.28%	23.47%	27.59%	31.03%	34.07%
218.84%	16.20%	23.34%	27.44%	30.86%	33.88%
221.65%	16.12%	23.22%	27.29%	30.70%	33.71%
224.46%	16.03%	23.10%	27.15%	30.54%	33.53%
227.26%	15.96%	22.99%	27.01%	30.39%	33.36%
230.07%	15.88%	22.88%	26.87%	30.24%	33.20%

232.87%	15.82%	22.78%	26.75%	30.10%	33.04%
235.68%	15.74%	22.67%	26.61%	29.96%	32.88%
238.48%	15.68%	22.56%	26.48%	29.81%	32.72%
241.29%	15.60%	22.45%	26.34%	29.66%	32.55%
244.10%	15.52%	22.34%	26.21%	29.51%	32.39%
246.90%	15.44%	22.22%	26.06%	29.36%	32.21%
249.71%	15.37%	22.11%	25.93%	29.21%	32.06%
252.51%	15.30%	22.01%	25.81%	29.07%	31.92%
255.32%	15.23%	21.90%	25.68%	28.93%	31.76%
258.12%	15.15%	21.79%	25.55%	28.79%	31.60%
260.93%	15.08%	21.68%	25.43%	28.65%	31.45%
263.74%	15.01%	21.58%	25.31%	28.51%	31.30%
266.54%	14.94%	21.47%	25.19%	28.39%	31.15%
269.35%	14.88%	21.39%	25.08%	28.27%	31.03%
272.15%	14.82%	21.29%	24.96%	28.14%	30.87%
274.96%	14.75%	21.18%	24.84%	28.00%	30.73%
277.76%	14.69%	21.09%	24.72%	27.87%	30.58%
280.57%	14.62%	20.99%	24.60%	27.74%	30.44%
283.37%	14.57%	20.89%	24.48%	27.61%	30.30%
286.18%	14.51%	20.81%	24.38%	27.50%	30.17%
288.99%	14.45%	20.72%	24.27%	27.37%	30.03%
291.79%	14.39%	20.63%	24.15%	27.25%	29.90%
294.60%	14.34%	20.54%	24.05%	27.13%	29.77%
297.40%	14.27%	20.45%	23.94%	27.01%	29.63%
300.21%	14.21%	20.35%	23.82%	26.89%	29.50%
303.01%	14.16%	20.28%	23.73%	26.77%	29.38%
305.82%	14.10%	20.19%	23.63%	26.67%	29.26%
308.63%	14.05%	20.10%	23.53%	26.56%	29.13%
311.43%	13.99%	20.02%	23.43%	26.45%	29.01%
314.24%	13.93%	19.94%	23.33%	26.34%	28.89%
317.04%	13.89%	19.85%	23.23%	26.23%	28.78%
319.85%	13.84%	19.78%	23.14%	26.14%	28.67%
322.65%	13.78%	19.70%	23.05%	26.03%	28.55%
325.46%	13.72%	19.62%	22.95%	25.93%	28.44%
328.27%	13.67%	19.54%	22.86%	25.82%	28.32%
331.07%	13.62%	19.48%	22.77%	25.73%	28.22%
333.88%	13.58%	19.41%	22.70%	25.65%	28.13%
336.68%	13.53%	19.34%	22.62%	25.56%	28.04%

Appendix II summarizes the average percentage of combined net income ("CNI") that represents child rearing expenses in the 11 IS-NI states in the analysis' population classified by income level and number of children. Income level, however, has been depicted as a percentage of Per Capita Personal Income ("PCPI"). For example, in the aggregate of the 11 IS-NI states, if the applicable CNI represents 56.11% of the state's PCPI, then child-rearing expenses are estimated at 24.22% of CNI. Essentially, the CNI / PCPI percentage was derived from the summation of CNI intervals divided by the summation of PCPI for the 11 IS-NI states in the population.

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