Comment on the Final Report –
Spring Reply to Betson Comments on the Economic Table and Residential Credit
From David Spring, Child Support Work Group member, December 30, 2008

SPRING REPLY TO BETSON COMMENTS ON THE ECONOMIC TABLE

Dr. Betson begins his comments on the Economic Table by claiming that there are only two assumptions underlying our Economic Table, these being the level of child support owed by parents after divorce and our ability to estimate this amount using economic data. This statement is factually incorrect. Historical documents confirm that our Economic Table is also based on a third assumption, namely, **the child's right to continue their relationship with BOTH parents after divorce.** Thus, our Economic Table represents a total obligation to the child which is then divided between the parents based not only on their share of the total income but also their share of the total time spent caring for the child.

The 1987 Washington State Child Support Commission report stated on page 3, "*The Objective was to propose a schedule which would establish an adequate level of support for children and would be equitable to the parents."* The "schedule" referred to in the 1987 report was what we now call the Economic Table. Thus, the amount in the Economic Table represents the amount needed to adequately support the child in two households and be equitable to both parents.

Among the Principles listed on page 8 of the 1987 report was the following:
A schedule (*or Economic Table) *should recognize the involvement of both parents in the child's upbringing. It should take into account the financial support provided directly by parents in shared physical custody or extended visitation arrangements.

In addition, according to the Washington State Parenting Act, (RCW 26.09), the child typically does not reside solely with one parent. Instead, the child resides with both parents and has two households. The Washington State Parenting Act states:
"The State recognizes the fundamental importance of the parent/child relationship to the welfare of the child; and that ***the relationship between the child and each parent should be fostered*** *unless inconsistent with the child's best interest."* RCW 26.09.002

Long standing Washington State Law thus assumes that the child will have two households after divorce and that the relationship between the child and each parent should be fostered. In other words, State law recognizes that both households are important to the child.

It is not fair to the child to try to maintain an unrealistically high standard of living in one of the child's households at the expense of depriving the child of the second household. Thus our Economic Table originally assumed there would be an equitable "per day" residential credit and in fact, beginning in 1984 and continuing to 1990, the Child Support Work sheets specifically included information on the number of overnights the child was with each parent and divided the total obligation based on the number of overnights with each parent. If a parent had the child 25% of the time, they were awarded 25% of the total obligation listed in the Economic Table and if the parent had the child 75% of the time, they were awarded 75% of the total obligation.

Dr. Betson, together with the attorneys from the Bar Association and Judges associations who dominate the current Child Support Work Group would like to dramatically depart from over 25 years of Washington State law by ignoring the assumption that the child has a right to a relationship (and a household) with BOTH parents after divorce. This extreme gender bias and disregard for the history of our Economic Table colors nearly every aspect of Dr. Betson's comments as well as the report submitted to the legislature by the Division of Child Support (DCS).

A good example of this disregard for the truth is Dr. Betson's recommendation of the Income Shares assumption "*setting support at the level of spending on the child that would have existed if the parents had maintained one household."* According to the Report submitted by DCS to the Legislature this week (and in 2005), "*The Washington child support schedule is based on the Income Shares Model developed by Robert Williams in 1987."* <u>These statements are also factually incorrect.</u>

It should be obvious that post divorce spending on the child cannot possibly be maintained at pre-divorce levels when the parents have to pay for two households instead of one. This is particularly true of low income parents who have no "discretionary" income with which to offset the increased costs of supporting two households. Thus the Income Shares assumption that pre-divorce spending on the child can be maintained in two post divorce households is asking divorced parents to do the impossible.

But more to the point, historical documents confirm that our Economic Table is not based on Income Shares assumptions or Income Shares studies. Our current Economic Table evolved from the 1982 Judge Shellan Table. This Table listed a "range" of three costs. The "lower" column reflected the level of existing support orders in 1982 which supposedly were based on the actual cost of raising children in 1982. The highest column was based on a book by Eden (1977) which was based on 1976 USDA report which was based in part on 1972 Consumer Expenditure Survey data and in part on the "per capita assumption" that children cost about the same as adults (i.e., 33% of combined net income in an intact family with two parents and one child). The Middle Column was roughly half way in between the lower "actual additional cost" of the child and the higher "per capita cost. Thus, **the Judge Shellan 1982 Table was actually based on a range of various direct cost estimation methods.**

In 1984, the Washington State Child Support Commission did away with the "low, medium and high" columns and just **retained the middle column**. For the sake of simplicity, for the median income family, the "low" or actual cost column was about 14% of combined net income, the highest (per capita) column was about 26% of combined net income and the middle column was about 20% which is why we have about a 20% Economic Table today. This middle column (which with only slight adjustments has become our current Economic Table) was thus based on an average of a direct cost estimate and an artificially high USDA "per capita" estimate.

Robert Williams (1987) took a much different approach, using an Engel method advocated by Espenshade (1984). The Engel method uses "spending on food" as an indirect proxy for spending on children." Williams called this indirect proxy method an "Income Shares Model" because it focused on the Total Income of the parents in an intact family rather than on the actual cost of raising the child in a post-divorce environment.

However, the Williams Income Shares method was not the basis of our current Economic Table. Instead, on page 11 of the 1987 Washington State Child Support Commission report, the authors described the model chosen by the Commission:

At least 18 states have adopted or are considering adoption of child support schedules that are based on the Income Sharing Model ***or on a hybridization of the Income Shares Model with the Cost Sharing Model.*** *The model suggests first that parental income be totaled. Next, the percentage of that total income that would have been spent on the children had the family remained intact is calculated and allotted to child support. Finally, each parent pays the percentage of child support that would correspond to their relative share (percentage) of the combined total income. The actual flow of child support payments will then depend on the amount of time the child spends with each parent.*

Thus, the Commission included aspects of BOTH Income Shares and Cost Shares models. On page 12, the 1987 Commission authors add:

The proposed schedule (what **become our current Economic Table)** ***uses a hybrid Income and Cost Sharing Model*** *similar to the one described in the previous section. It was chosen over the alternatives because of its* ***neutrality regarding residential placement*** *and because it is more equitable in regards to the parents' support obligation, while still providing economic protection for the children.*

The reason the 1987 Commission said our Table was a "**HYBRID" of Cost Sharing and Income Sharing Models** was that our Economic Table is about half way between actual cost sharing estimates of about 14% and "per capita" estimates (whether Williams or USDA) of about 26% of combined net income. In effect, there were almost a dozen "actual cost" studies which concluded that one child cost 10% to 16% of combined net income. Then there were a couple of "per capita" studies which concluded that one child costs 26%. The 1984 Commission (and later the 1987 Commission) could not make up their minds who was right. So they did as Dr. Betson suggested: They simply **split the difference and averaged the two kinds of studies.** Thus, at most our current Economic Table is a compromise between actual cost sharing estimates and per capita "income sharing" estimates. What Dr. Betson is really saying is that he thinks our State to abandon 27 years of using a compromise between actual cost estimates by simply adopting the Betson per capita "income shares" as the basis for our Economic Table.

This would be a radical shift from a 20% compromise Economic Table to 25% per capita (Income Shares) Economic Table without any change in the underlying cost of child rearing (Note that while the actual dollar cost of child rearing has gone up in the past 27 years, the dollar cost of non-child items has gone up the same amount such that **the percentage cost of child rearing as a percentage of combined family income has not change at all in the past 27 years**). For example, the USDA has always asserted that the median cost of child rearing in an intact family was 26%. There is almost **no difference between their 1976 report and their 2006 report.** The USDA has also admitted that if one used an "added cost" assumption rather than a "per capita" assumption, their estimate of one child cost would fall below 20% of combined family income.

In his latest comment, Dr. Betson claims that his Betson Rothbarth and Betson Engel estimates are not "per capita" estimates. Yet at the same time, he notes that his estimates are nearly identical to the USDA estimates. The USDA at least is honest enough to admit that their estimates are based on the "per capita" assumption that children cost the same as adults. Clearly the fact that Dr. Betson achieved the same result is itself proof that his method was based on the same "per capita" assumption.

Dr. Betson has gone to great lengths to hide the fact that his method is a "per capita" estimate. These distortions of the truth are described in more detail in my "Addendum to the Analysis of Child Support Issues" which I submitted to the Washington State Child Support Work Group in February 2008. But one distortion in particular is worth mentioning here to show the extent to which Dr. Betson is willing to got to distort the facts. As noted on page 47 of the Addendum:

In his 1990 study, Betson concludes *"My best guess of the total cost of raising children, expressed as a percentage of total household expenditures is 25%, 35% and 40% for one, two and three children in a two parent household*." (page 57).
Betson based his "best guess" on a Rothbarth result of 25% for a median family. However, on page 194 of his analysis, Betson claimed that Lazear got a Rothbarth result of **19%**. Betson then claimed that his 25% estimate was "remarkably similar" to Lazear's 19% estimate. Even though there was a 6%/19% = 32% difference, Betson was not convinced these two estimates were "statistically different" (Betson, 1990, page 194). But in fact, when one reads the Lazear study,[1] Lazear actually reported on page 87 that **the cost of one child was 16% not 19% was claimed by Betson**.
Thus, Betson over-stated the Lazear result by 3%. Betson was forced to misrepresent Lazear's result because had he reported the real value for Lazear, there would have been no question that **Betson's result of 25% was statistically different from Lazear's result of 16%**. **The real difference between Betson's result and Lazear's result was 25%-16%= 8%/16% = 50% increase compared to Lazear's estimate of child cost!!!**

What is equally damaging is that Turchi's Rothbarth estimate for the cost of one child (1983) [2] was also 16%. So the question remains: Why was Betson's 1990 Rothbarth result 50% greater than Turchi (1983) and Lazear & Michael (1987) even though all three used a Rothbarth method? (Hint: we will shortly show that per capita methods yield results which are about 50% greater than marginal results). Despite these pretty obvious clues, the question of why Betson's result was 50% higher than other Rothbarth studies even though all three used the same CEX data set remained unanswered for 14 years. Then in 2004, McCaleb et al. (Florida State) completed an analysis of CEX 1999 to 2003 data using two different methods, a marginal Engel method which got an Economic Table result of 17% and a "per capita adjustment" method used by Betson in his 2001 Engel and Rothbarth analysis which got a result of 27%. McCaleb showed that the 10%/17% = **59% increase in result was entirely due to the Betson "per capita adjustment**" that neither McCaleb, Lazear or Turchi had used. [3]

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[1] Lazear E. P. & Michael, R.T. (1988) *Allocation of Income within the Household*, Chicago: University of Chicago Press.

[2] Turchi, B.A. (1983) Estimating the Cost of Children in the United States, final report to the National Institute of Child Health and Human Development, from the University of North Carolina.

[3] McCaleb, T.S., Macpherson, D.A., & Norrbin, S.C., (2004) *Review and Update of Florida's Child Support Guidelines*, Report to the Florida State Legislature, Florida State University Department of Economics, Tallahassee, Florida.

Thus, the **real reason Betson was forced to deliberately mis-report Lazear's result was to hide the fact that Betson had used a per capita adjustment.**
Edward Lazear is one of the most famous Economists in America today. He is currently the Chair of the White House Council of Economic Advisors. In his 1987 book on the Cost of Raising Children, Lazear devoted an entire chapter to the fallacy of the "per capita" assumption. Lazear complained that Economists often made critical errors by making assumptions they knew could not possibly be true. Lazear told the joke about the Economist who was stuck on a desert island with only a can of food. How the Economist survived was by "assuming he had a can opener"!!! The same can be said for Dr. Betson who has artificially driven up the cost of child rearing by assuming the child costs the same as an adult.

Regarding the Betson per capita adjustment, the three Florida State PHD Economists noted on page 34: *Following Espenshade, (the Florida State study) uses the log of total family expenditures and its square and the log of family size to control for total family spending and economies of scale**. The Betson model uses the log of per capita family expenditures*** *and its square and the log of family size to control for total family spending and economies of scale. There does not appear to be any substantive economic rationale for choosing one of these specifications over the other, but this* ***difference in specification seems to be driving the differences in estimates.***

The differences referred to were greater than 50%. In short, Betson was able to artificially drive up the cost of child rearing by more than 50% by making assumptions known to be false. In his latest comment, Dr. Betson now proposes that science cannot answer the question of how much it costs to raise a child because the cost of the child is heavily dependent on the assumptions made by the model. Therefore, we should simply ignore the fact that some of the assumptions may be false and simply average the latest scientific studies without any critical examination of their underlying assumptions.

Dr. Betson is correct in stating that the assumptions of the model determine the outcome of the estimate of child cost. If one uses a "per capita" assumption, as the USDA and Betson studies, one will get an estimate for one child of 25% to 30%. If one uses a marginal added cost or actual cost assumption, one will get 12% to 17%. So on the surface, splitting the difference might seem like a reasonable option.

But as Dr. Lazear has noted, science does not regard all assumptions as being equally true. Nor does science regard all studies as being equally valid. One purpose of "explained variation" (also called R-Squared) is to assess which studies have greater predicting power. As I noted in the Minority Report on the Economic Table:
The Betson-Rothbarth estimate suffers from several serious drawbacks. [4] It is based on using spending on adult clothing to estimate the cost of child rearing in intact families. Dr. Betson's own analysis of this method is that adult clothing purchases explain less than 10% of the variation in child rearing costs. [5] In plain English, this means **there is almost no relationship**

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[4] See Spring, D (2008) Analysis of Child Rearing Costs, submitted to the Washington State Child Support Work Group, January 6, 2008, Section Three, pages 60 to 90 for a more detailed explanation of the drawbacks of the Betson Rothbarth method.
[5] Betson, D. (1990) Alternative Estimates of the Cost of Children From the 1980-86 Consumer Expenditure Survey, *Institute for Research on Poverty*, University of Wisconsin, Special Report No. 51. page 130.

between spending on adult clothing and spending on children. In order to try to create a relationship where no relationship exists, Dr. Betson eliminated over 95% if the Consumer Expenditure Survey respondents (including all of incomplete responders) from his sample. [6] These exclusions led to extremely biased results which greatly inflated the Betson-Rothbarth estimate of the cost of child rearing in intact families.

Many PHD economists have criticized the Rothbarth method for being unreliable and invalid and have also reported an inconsistent relationship between spending on adult clothing and spending on children. For example, Bradbury (1994) reported that adult clothing expenditures (Rothbarth model) was only able to explain 1% of the variation in child spending. On page 133, Bradbury noted *"the estimates are still far from the precision required for policy applications… the large degree of variation in clothing expenditure meant that these were not statistically significant… the standard errors for all these estimates are quite large, and so it is difficult to make any strong inferences*." [7]
We therefore cannot support the Betson Rothbarth method as a basis for our Economic Table.

The Betson Engel method is based on using spending on food to estimate spending on children. The Engel method results in a percentage of explained variation that is much higher than the Rothbarth method. In his 1990 study, Dr. Betson estimated the explained variation to be about 50% and in their 2004 study, McCaleb et al. estimated the explained varation to be 68%. [8]
In plain English, this means there is a strong relationship between family spending on food and total spending on children. Despite this relationship, the Betson Engel method still suffers from several series drawbacks. Like the Betson-Rothbarth method, Dr. Betson systematically eliminated over 95% of the Consumer Expenditure Report (CEX) responders (including all of the incomplete responders) [9] in order to artificially drive up the cost of child rearing.
Dr. Betson also used a "Per Capita adjustment" with both his Rothbarth and Engel calculations. … Dozens of PHD Economists have severely criticized the "per capita" assumption as being a knowingly false means of driving up the cost of child rearing from about 20% to about 33% of total family costs. [10] We therefore cannot support the Betson Engel method as it is known to have used many math tricks and false assumptions to artificially inflate the cost of child rearing.

In 2004, the Florida State legislature funded a study on child rearing costs conducted by three leading PHD economists from Florida State University (McCaleb et al, 2004). These three economists chose a "marginal Engel" method in part because of the high level of validity and reliability of this method (including a high percent of explained variation). The authors of the Florida State study also included incomplete responders in their "marginal-Engel" analysis. These two substantial differences between the Betson Engel Per Capita method and the Florida State Engel Marginal method (i.e., usage of a marginal adjustment factor and usage of a less biased sample) greatly increased the percentage of explained variation from about 50% to about

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[6] The exact number of exclusions is unknown because Dr. Betson refuses to release this information despite repeated requests from Work Group members that he disclose this information.

[7] Bradbury, B. 1994, Measuring the Cost of Children, *Australian Economic Papers*, June 1994, 120-138.

[8] McCaleb, T.S., Macpherson, D.A., & Norrbin, S.C., (2004) *Review and Update of Florida's Child Support Guidelines*, Report to the Florida State Legislature, Florida State University Department of Economics, Tallahassee, Florida, page 13.

[9] Incomplete CEX responders tend to be up to 10 years younger and much poorer than complete responders. Because they have higher fixed expenses, they likely spend less on children. See Spring, D (2008) Analysis of Child Support Issues, submitted to the Washington State Child Support Work Group, January 6, 2008, Section Three, page 78 for a more detailed explanation of this subject.

[10] See Spring, D. (2008) Addendum to Analysis of Child Support Issues, pages 17 to 20 submitted to the Washington State Child Support Work Group on February 20, 2008 for a more detailed discussion of this topic.

68%. This means the Florida State Engel method was more robust at explaining variations in family spending on children than the Betson Engel method.

Because the Florida State 2004 study is still the most robust, reliable and statistically valid study on the cost of child rearing ever produced, **we recommend that the Washington State Legislature use the Florida State University method and adopt the associated Economic Table as the basis for revising our current Economic Table.**

CONCLUSION

The debate between actual cost estimates (also called marginal cost estimates or cost sharing estimates) and per capita estimates (also called income shares estimates) has been going on for at least 30 years. In his latest comments, Dr. Betson urges the legislature to ignore all cost share studies and use only the Betson Income Shares estimates. In this response, I urge the legislature to ignore the Betson Income Shares estimates because they are in fact based on the "per capita" assumption. The option the legislature chose in 1987 and again in 1990 and again in 1993 was to continue with our current compromise Economic Table and not make a decision about which set of assumptions was most valid. In effect, they were saying it is okay for Dr. Betson to assume he has a can opener when in fact he does not.

But such a compromise decision is much less justified now that we have the benefit of the 2004 Florida State study. This study makes it clear that the Betson Tables are way too high and the Betson assumptions grossly inflate the cost of child rearing. While the Florida State authors humbly stated that there is no scientific basis for their assumptions to be superior to Dr. Betson's assumptions, the fact that the Florida State Explained Variation is much higher than the Betson Explained Variation is proof enough that the Florida State assumptions are more accurate and valid than Dr. Betson's assumptions.

Dr. Betson attempts to minimize the weakness of his methods by claiming that "F ratios" are superior to R-Squared or Explained Variation. Dr. Betson notes that his results were within the 95% to 99% Confidence Interval. But these are very mis-leading statements. All they really mean is that there is a 99% chance that his Betson Rothbarth relationship (between spending on adult clothing and spending on children) is not random. It says nothing at all about the strength of the relationship. R Squared or Percentage of Explained Variation is a much more meaningful statistic because it gives the reader a simple and meaningful way to judge the strength of the relationship. Obviously, **a Florida State method that explains 68% of the variation in the data (when using all responders) is far more valid the Betson Rothbarth method that only explains 8% of the variation in the data (when using all responders).** To ignore this huge difference between these two studies would be like placing equal confidence in the exam results of a student who was right 68% of the time and the exam results of a student who was right only 8% of the time under the theory that neither students answers were random and therefore both students were somehow on the same level. I have spent years as an Educational Researcher taking courses in statistical analysis. I have read hundreds of studies on the relationships between numerous educational variables. In order to separate the garbage from the better studies, I have learned to seek out the Percentage of Explained Variation (or R –Squared). As a general rule, explained variation below 20% is considered a weak relationship. So 8% is a pretty pathetic result and just barely above no relationship at all. Also any relationship above 50% is considered a very strong relationship. So a model which is able to explain 68% of the total variation is truly a remarkably strong result.

F ratios suffer from another problem in that they would not be well understood by the general public or indeed by anyone who has not had one or more courses in Statistical Analysis. By contrast, R Squared or Percent of Explained Variation can be readily understood by the general public. A model which explains 60% of changes in family spending is much more reliable than a model which only explains 8% of the variation in family spending on children. This is likely the reason that the Florida State authors chose not to post their F ratios. However, it is certain that higher Percentage of Explained Variation will lead to higher F ratios has is confirmed by the following chart:

STUDY Author and Type	**Explained Variation (R Squared)**	**F Ratio**	**Study Reliability**
Betson Per Capita Engel Intact families, All Observations (1)	52.6%	779	Moderate
Florida State Replication of Betson Per Capita Engel, Intact families, All Observations	52.6%	Not reported, but near 779	Moderate
Florida State Marginal Engel Intact families, All Observations	**68%**	Not reported, But over 990	High
Betson Per Capita Rothbarth Intact families, All Observations	**08%**	26	Very Low

(1) From Betson (1990) page 71.
(2) From McCaleb et al (2004) page 33
(3) From McCaleb et al., (2004) page 13
(4) From Betson (1990) page 87

So whether one is looking at F Ratios or Explained Variation, real scientific data analysis is not as much in the Stone Ages as Dr. Betson would have his readers believe. There are simple and valid ways of distinguishing between better and worse studies. Clearly the Florida State 2004 study is much better than anything produced by Dr. Betson. It therefore would be inappropriate to "average" the good with the bad. Instead, the honest conclusion is to use the Florida State estimate as the basis for our Economic Table because it represents the current best scientific estimate of the cost of child rearing in intact families.

SPRING REPLY TO BETSON COMMENTS ON THE RESIDENTIAL CREDIT

I will keep these comments very short. Dr. Betson's residential credit method is much like his Economic Table method in that he makes assumptions which are simply not valid. In particular, he assumes that spending on the child goes up in shared parenting arrangements when it cannot possibly go up. In fact, it must go down as essential NON-CHILD costs consume a greater share of the total combined income of the parents. Second, Dr. Betson assumes that child costs on a per day basis are greater in the higher time parents household than in the lower time parent's household. This assumption is also false and has been showed to be false by all three studies conducted on the costs of shared parenting (see the Minority Report on Residential Credits for more on this). As with the Economic Table, Dr. Betson is very fond of assuming he has a can opener when in fact he does not. What Dr. Betson is really advocating for is a dramatic change in Washington State law which will eliminate the "neutrality regarding child placement" and create a huge financial incentive for divorce and litigation over which parent will receive a financial wind fall of caring for the child.