Study of State Demographic, Economic, and Programmatic Variables and Their Impact on the Performance-Based Child Support Incentive System

Final Report

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EXECUTIVE SUMMARY

A. Background

Since 1975, the federal government has paid incentives to state child support enforcement programs to encourage improvement in collections through efficient establishment and enforcement techniques.[1] The method used to determine incentive payments has changed dramatically since 1998. Between 1984 and 1998, the federal government based a state's incentives payment on a percentage of their TANF and non-TANF collections. The percentage of incentives paid was determined by measurement of state program cost-effectiveness—defined as a state's total collections divided by its total administrative costs. States received a payment equal to at least six percent of collections.[2] High-performing states (i.e., those with a collection-to-cost ratio of at least 2.8 to 1) could receive a payment equal to 10 percent of collections.

In 1998, Congress enacted the Child Support Performance and Incentive Act (CSPIA) to revise the incentive structure and reward states for performance on a larger number of their establishment and enforcement practices. Specifically, Congress linked incentive payments to a state's performance in five areas:

- Paternity establishment (states can choose between one of two measures: paternity establishment statewide or specific to the IV-D caseload);
- Establishment of child support orders;
- Collections on current support due;
- Cases with collections on arrears (past support due);
- Cost-effectiveness (i.e., total collections divided by total administrative costs).

Other key elements of the new incentive system include:

- **Capped pool of incentives**. The overall payment pool is capped. The incentive pool was $422 million in fiscal year (FY) 2000. The capped system creates an interactive effect because an increase in payments to one state must be matched by a decrease in others.
- **State incentive potential related to collection levels.** Incentive payments are a function of the state collection base, which is child support collected for current and former TANF cases multiplied by two plus the collection amount for cases never on TANF.
- **Performance corresponds to an incentive percentage.** To calculate the incentive payment, state performance on each measure corresponds to an incentive percentage (e.g., if a state has

[1] The 1975 law based incentives on collections for public assistance cases. A 1984 law expanded the incentive formula to include collections for non-public assistance cases.

[2] Incentives for non-TANF collections were capped at 115 percent of the amount paid for the TANF collections.

established orders for 80 percent or more of the cases in its system, it would receive 100 percent of the cases with orders incentive payment).

- **Audited data underlie system**. Data used to calculate incentives must be complete and reliable, as determined by an audit. If an audit finds that data is not complete and reliable for a given measure, the state receives zero payments for that measure.

The federal Office of Child Support Enforcement (OCSE) has implemented the new incentive formula gradually over the fiscal year (FY) 2000-2002 period. Policymakers called for the gradual phase-in, in part, so state officials would have time to perfect their measurement of performance and data reliability, and identify factors that affect both.

A 1999 study by the Lewin Group and ECONorthwest documented the importance of incentive payments to the state financing of child support enforcement. While state practices regarding the use of incentives were largely unknown before 1997, Fishman et. al.[3] showed that the majority of states earmark incentive payments to the child support enforcement (CSE) program. Indeed, CSPIA mandates such earmarking for the few remaining states that did not do so historically. The study also noted that incentive funds take on added importance because, when they are used for child support expenditures, they are matched two for one by Federal Financial Participation (FFP) funding. Therefore, a loss of one incentive-dollar translates to a three-dollar loss of total program funding.

The effectiveness of the new incentive system will hinge, in part, on whether states perceive it to be fair; that is, whether they perceive a clear tie between an improvement in performance and the amount of incentive payments they receive. It will also rest on the perception that states are not being "penalized" for factors beyond their control. If state economic and demographic characteristics affect performance on any of these measures, the new incentive system would reward states for performance improvements inequitably as well as jeopardize state acceptance of the system.

B. Purpose of the Study

In passing CSPIA, Congress mandated a study of the economic and demographic characteristics of states and how they affect performance, calling on the Secretary of the Department of Health and Human Services (DHHS) to recommend adjustments to ensure that the relative performance of the states is measured from a baseline that takes account of such variables. This study provides the underlying data for the Secretary's report. Specifically, the study seeks to answer two questions:

1. What economic, demographic, and programmatic factors are associated with the performance of state child support enforcement programs?

[3] Fishman, Michael E., Kristin Dybdal, and John Tapogna. 1999. *State Financing of Child Support Enforcement Programs: Final Report.* Prepared for the Assistant Secretary for Planning and Evaluation, DHHS. Washington DC.

2. If empirical work identifies factors that affect performance and are outside the control of child support agencies, how could DHHS amend the incentive system to account for the factors with the goal of improving the system's equity?

To address these questions, we assembled state-level data on over 50 economic, demographic, and programmatic variables that have theoretical relationships with child support performance. Economic characteristics, such as personal income per capita and employment rates, gauge the relative ease that non-custodial and custodial parents will encounter in securing and keeping jobs to support their children. Demographic characteristics, including migration rates and urbanicity, indicate populations that IV-D officials have identified as inherently easy or difficult to serve. Finally, programmatic characteristics, like staffing levels or degree of program universality, measure aspects of programs determined, in large part, by state policy and funding decisions. With these state-level data in hand, we then developed a number of statistical models to explore and estimate the independent effects, if any, of each of these theorized determinants of child support performance. We developed a distinct statistical model for each of CSPIA's five measures. We estimated the models using 1999 data, 2000 data, and pooled 1999 and 2000 data.

C. Findings

Our final models relied on 12 economic, demographic and programmatic variables. We employed different combinations of these variables to predict each performance indicator; no model used all 12. The stability and reliability of the models varied across the performance indicators. For example, the model for cases with orders explained more than 73 percent of the variation in the performance scores reported by states. On the other hand, our model for the statewide paternity establishment indicator explained only 33 percent of the variation in state scores.

Below, we summarize the key findings that emerged from our analyses of the pooled 1999 and 2000 data.

A robust economy is associated with better performance. We ultimately settled on four economic indicators in our final models: poverty rate, personal income per capita, job growth, and the employment rate of working-age males. We included at least one of these indicators in each of our final regression models, and they were statistically significant in most cases. However, no single indicator performed well across all models. Specifically:

- A higher *poverty rate* was associated with weaker child support program performance on the cases with orders and arrearage measures.

- *Per capita personal income* did a better job in predicting rates of current collections, with higher personal incomes linked to better performance.

- A higher rate of *males not working* depressed performance on current collections and cost-effectiveness.

- A higher rate of *job growth* was associated with better performance on the arrearage measure.

Demographic factors play a role in state performance. We explored stability of the local population, percent of the population living in urban areas, and the percent of TANF heads under age 30. We found:

- A higher share of *urban dwellers* is associated with weaker performance in the four models in which it was used: cases with orders, current collections, cost-effectiveness and arrears. We speculate that the urban variable is serving as a proxy for a host of more specific characteristics that more directly influence child support outcomes (e.g., non-marriage births, crime, and incarceration rates).

- *Population stability* exhibits strong relationships with the statewide paternity measure, cases with orders, current collections, and cost-effectiveness. We found that the more stable a state's population—as evidenced by the share who remain in the same house from one year to the next—the better is the state performance.

- States with *younger TANF case heads* exhibited weaker performance for paternity establishment (IV-D measure), current collections, and cost-effectiveness.

Several programmatic factors—determined by state and agency policies—appear to be related to child support enforcement. We explored program universality, cases per full-time equivalent (FTE) staff, child support expenditures per case, and the process for establishing orders.

- Our findings are consistent with the hypothesis that states that serve a large number of *non-TANF clients* should report better performance than programs that primarily serve current recipients of cash assistance. Specifically, we find that states with a higher share of IV-D cases receiving TANF exhibit weaker performance on the paternity (statewide), case with orders, current collections, arrearages, and cost-effectiveness measures.

- We found that staff resources devoted to enforcement—expressed in terms of *cases per FTE* are also related to performance. Specifically, the lower is the ratio of cases to total program staff, the better is performance in the cases with orders and current collections measure.

- Another measure of resources—*average IV-D expenditures per case*—is related to better performance on the paternity measure (statewide) but weakens the cost-effectiveness ratio.

- *The process by which states establish child support orders* appears related to their performance on case with orders. Specifically, having an administrative processes is associated with better performance in order establishment.

States will likely face tradeoffs in attempting to maximize overall performance. Officials will likely discover an inherent tradeoff between cost-effectiveness and the other performance measures. For example, if states increased staffing levels in an attempt to boost case establishment or current collection rates, they would likely increase spending per case, which could decrease their cost-effectiveness ratios.

Adjustments to state performance scores would be feasible at this time for four of the five indicators. Using the findings from the models, OCSE could adjust state performance scores for all but the paternity establishment measure so as to hold states harmless for economic and demographic factors that appear to be associated with child support performance but over which program directors have no control. For example, states with characteristics that are linked with weaker child support enforcement performance (e.g., higher-than-average state poverty rates, lower-than average per capita personal incomes, and high levels of in- or out-migration) would see upward adjustments, while states with strong economies and stable populations would receive downward adjustments. The U.S. Department of Labor employed a similar type of adjustment process in its allocation of funds under the Job Training Partnership Act program. Advantages and disadvantages would be inherent in an adjustment process.

- Advantages include an increased perception of equity in the incentive funding system, particularly among states that perceive themselves as penalized by factors beyond their control (e.g., weak economies).

- Disadvantages would stem from mistrust of the regression models, and their underlying data, employed to make the adjustments. Moreover, the process for determining state incentive payments is already long and complex. Adjusting state scores based on economic and demographic factors could lengthen the time of the process, thus delaying the payment of incentives. This is due to the interactive nature of the incentive system. A capped incentive pool means that an upward adjustment to one state would have to be matched by a same-size downward adjustment in other states.

Further research will be necessary. This study is based on two years of data. The original modeling used FY 1999 data. We re-ran the regressions using FY 2000 data and found that most, but not all, of the relationships remained stable. Our strongest results were produced when we increased the sample size by pooling FY 1999 and 2000 data. Further studies should aim to replicate our findings. By using individual-year data, researchers can explore whether the variables we identified as significant factors in child support performance remain stable over time. Combining the data for additional years would increase the sample size further. At some point, it may be possible to model adjustments for the paternity establishment measures.

I. INTRODUCTION

A. Background on Incentive Payment Methods

Since 1975, the federal government has paid incentives to state child support enforcement programs to encourage improvement in collections through efficient establishment and enforcement techniques.[4] The method used to determine incentive payments has changed dramatically since 1998. Between 1984 and 1998, the federal government based a state's incentives payment on a percentage of their TANF and non-TANF collections. The percentage of incentives paid was determined by measurement of the state program cost-effectiveness—defined as the states total collections divided by its total administrative costs. States received a payment equal to at least six percent of collections.[5] High-performing states (i.e., those with a collection to cost ratio of at least 2.8 to 1) could receive a payment equal to 10 percent of collections.

In 1998, Congress enacted the Child Support Performance and Incentive Act (CSPIA), to revise the incentive structure and reward states for performance on a larger number of their establishment and enforcement practices. Specifically, Congress linked incentive payments to a state's performance in five areas:

- Paternity establishment;
- Establishment of child support orders;
- Collections on current support due;
- Cases with collections on arrears (past support due);
- Cost effectiveness (i.e., total collections divided by total administrative costs).

Other key elements of the new incentive system include:

- **Capped pool of incentives**. The overall payment pool is capped. The incentive pool is set at $422 million for FY 2000, $429 million for FY 2001, $450 million for FY 2002, $461 million for FY 2003, $454 million for FY 2004, and increases to $483 million by FY 2008. The capped system creates an interactive effect because an increase in payments to one state must be matched by a decrease in others.
- **State incentive potential related to collection levels.** Incentive payments are a function of the state collection base, which is child support collected for current and former TANF cases multiplied by two plus the collection amount for cases never on TANF.

[4] The 1975 law based incentives on collections for public assistance cases. A 1984 law expanded the incentive formula to include collections for non-public assistance cases.

[5] Incentives for non-TANF collections were capped at 115 percent of the amount paid for the TANF collections.

- **Performance corresponds to an incentive percentage.** To calculate the incentive payment, state performance on each measure corresponds to an incentive percentage. For instance, if a state's support order performance level is 57 percent, it would receive 66 percent of the cases with orders incentive payment, assuming it passed the audit.

- **Audited data underlie system.** Data used to calculate incentives must be complete and reliable, as determined by an audit. If an audit finds that data is not complete and reliable for a given measure, the state receives zero payments for that measure.

The federal Office of Child Support Enforcement (OCSE) has implemented the new incentive formula gradually over the fiscal year (FY) 2000-2002 period. Policymakers called for the gradual phase-in, in part, so state officials would have time to perfect their measurement of performance and data reliability, and identify factors that affect both.

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- If empirical work identifies factors that affect performance *and* are outside the control of child support agencies, how could DHHS amend the incentive system to account for the factors with the goal of improving the system's equity?

In answering the first question, we expanded the scope of the project beyond the original Congressional request and included an analysis of programmatic factors—such as staffing levels and award establishment processes. This was necessary because we needed to consider the associations of *all* potential determinants of performance in order to generate unbiased estimates of the effects of economic and demographic factors. Underlying the study are the performance data reported by states in FY 1999 and 2000. OCSE used the FY 1999 data as a baseline. The FY 2000 incentive payments were based on a combination of the old incentive formula (2/3 of the incentive payment) and the new formula (1/3 of the payment).

We assembled state-level data on over 50 economic, demographic, and programmatic variables that have theoretical relationships with child support performance. The variables include state rates of poverty, unemployment, non-marital births, migration and incarceration. We also considered IV-D program spending and staff levels and other program features that experts believe affect performance. We then developed a number of statistical models to explore and estimate the independent effects, if any, of each of these theorized determinants of child support performance. We developed a distinct statistical model for each of CSPIA's five measures. We then applied the models results to the incentive policy. Specifically, we show how adjustments could be made to state scores for each performance measure.

C. Organization of the Report

In the remainder of this report, we describe the study's methodology and limitations (***Section II***); describe the study variables (***Section III***); report our results from our statistical analyses (***Section IV***); apply our statistical findings to OCSE policy on incentive payments (***Section V***); and summarize our key findings (***Section VI***). Finally, within several appendices to this report, we provide sources of existing information related to this topic as well as state-specific performance data for the reader's reference.

II. STUDY METHOD AND LIMITATIONS

A. Method

The study consisted of estimating the direct relationships between a selection of *dependent* variables (that is, variables that measure child support performance) and a host of *explanatory* variables that, taken together, help explain variations in the dependent variables. As discussed previously, OCSE directed us to use the five performance measures enacted through CSPIA as the dependent variables. Below we describe the key steps involved and discuss the list of variables that program experts have recommended for inclusion.

Through a related Lewin/ECONorthwest study on this topic, *Preliminary Assessment of the Association between State Child Support Enforcement Performance and Financing Structure,* (Fishman, et al, 2000)[7] we identified multivariate regression analysis as the technique best suited for this type of study. This statistical technique generates estimates of the independent effect of a variety of factors on performance—while holding other characteristics constant. For instance, a researcher might ask:

> *"How would an increase in the state's poverty rate affect its collection of current support if the state was typical in every other way?"*

If designed properly with reliable data, a regression analysis provides the estimated relationship between an explanatory variable and a given performance indicator.

As with our previous study, we rely on secondary or existing data sources for this analysis. Specifically, we draw data from the U.S. Bureau of the Census Current Population Survey (CPS), OCSE administrative data, the U.S. Department of Commerce's Bureau of Economic Analysis, and the U.S. Department of Labor's Bureau of Labor Statistics.

With the performance and explanatory variables in hand, we specify the multivariate regression models. In their most general form, the models take the following form:

CSE Performance = f(demographic, economic, programmatic factors)[8]

Because the effect of a given explanatory variable may differ across performance measures, we construct a unique regression model for each performance measure. In the case of paternity establishment, we develop two separate models because states have the option of measuring

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[7] See Fishman Michael, John Tapogna, Kristin Dybdal, and Stephanie Laud. March 2000. *Preliminary Assessment of the Associations between State Child Support Enforcement Performance and Financing Structure.* Prepared for the Assistant Secretary for Planning and Evaluation and the Office of Child Support Enforcement. Washington, DC.

[8] As described below, we estimate linear equations relating performance to the demographic, economic, and programmatic factors expected to affect performance. The relationship between the performance measure Y and the explanatory variables X is assumed to be of the form $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + ... + \beta_n X_{ni} + \varepsilon_i$. Regression analysis provides estimates of the values of the ß terms.

paternity establishment for the entire state ("statewide paternity") or for the IV-D caseload ("IV-D paternity").

B. Selection of Study Variables

Language in CSPIA explicitly defined the dependent variables as the five Congressionally specified performance measures. The dependent variables were readily available from OCSE. Moreover, the agency's audit division assessed the accuracy of each state's data submission. In our final models, we pooled the performance data for FY 1999 and FY 2000, so each state essentially had two data points for each measure.

We developed a roster of explanatory variables through two processes. First, we reviewed the academic literature on the determinants of performance in child support enforcement. With the findings from the literature in mind, we then conferred with a number of researchers and program experts to identify other variables with hypothesized associations with performance.

1. Literature Review

The professional literature on the determinants of child support performance is limited to a number of articles published within the last several years. Sorensen and Halpern (1999)[9] conducted a time-series analysis (1976-1997) with the goal of assessing the effect of the IV-D system, and particular enforcement tools, on collections. They concluded state-level policies—the $50 pass-through, presumptive guidelines, and tax offset tools—had significant and positive effects on collection rates. In measuring the effects of those policies, they controlled for and measured the independent effects of a number of economic and demographic variables.

Garfinkel, Heintze, and Huang (2000)[10] considered the effects of stronger child support enforcement on the incomes of custodial mothers and their children. The study found that more stringent child support enforcement has increased child support collections and decreased welfare caseloads. Moreover, the researchers concluded that improved enforcement increased the labor supply of mothers who otherwise would have been on welfare and slightly increased the labor supply of non-custodial parents.

Fishman et al (2000) looked directly at the OCSE performance indicators and considered the effects of a state's financing structure on performance. While they did not find strong associations between performance and methods of state finance, they did measure statistically significant relationships between performance and other economic, demographic, and programmatic factors.

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[9] See Sorensen, Elaine and Ariel Halpern. December 1999. *Child Support Enforcement: How well is it doing?* Discussion Paper 99-11. The Urban Institute. Washington, DC.

[10] See Garfinkel, Irwin; Theresa Heintze and Chien-Chung Huang. December 2000. *Child Support Enforcement: Incentives and Well-Being.* Prepared for the Conference on Incentive Effects of Tax and Transfer Policies. Washington, DC.

In the following sections, we discuss the key findings of these studies with respect to individual economic, demographic, and programmatic measures.

a. Economic variables

Each of the studies discussed above hypothesized that economic conditions faced by the non-custodial and custodial parents would have an effect on the performance of a child support enforcement program. The studies used earnings levels and rates of employment or unemployment as measures of economic conditions.

Income and Earnings Measures. Sorensen and Halpern (1999) found that increases in average earnings of single men were positively correlated with rates of child support receipt. Specifically, the study concluded that the modest increases in average earnings for single men during 1976-1997 were responsible for a 0.6 percentage point increase in the rate of child support receipt for never-married women. For previously married women, the estimated impact of earnings was 0.3 percentage points. Similarly, Garfinkel, Heintze, and Huang (2000) measured a positive effect of the non-custodial parent's income on child support payments.

Employment Measures. Findings on the association between performance and rates of unemployment or non-employment have been mixed. Fishman et al (2000) found a negative association between the proportion of males ages 20-64 not employed and the state's share of IV-D cases with orders. Specifically, the study found that a one percentage point increase in the ratio of males not working was associated with 1.3 percentage point decrease in the percent of IV-D cases with orders for support. The study did not show statistically significant relationships between the ratio of men not working and four other measures of performance.[11] Sorensen and Halpern (1999) and Garfinkel, Heintze, and Huang (2000) found no relationship between state unemployment rates and their respective measures of CSE performance.

b. Demographic variables

In addition to considering economic factors, each of the three studies controlled for demographic changes observed over time or across states.

Race and Ethnicity Measures. Garfinkel, Heintze, and Huang (2000) estimated that, holding other factors constant, eligible African-American and Hispanic custodial parents are less likely to receive child support than their white counterparts. By contrast, Sorensen and Halpern (1999) found that African Americans were more likely to receive support than whites, while Hispanics were less likely to receive support than whites—again holding other characteristics constant.

Other Demographic Measures. Sorensen and Halpern (1999) and Garfinkel, Heintze, and Huang (2000) estimated that the receipt of child support increases with the custodial parent's age and educational attainment. Also, Sorensen and Halpern found that the more children in a family who are potentially eligible for support, the less likely the family is to receive support.

[11] Current collections, collections on arrears, cost-effectiveness, and paternity establishment.

Past research also suggests that a state's urban and rural mix is associated with CSE performance. Fishman et al (2000) found strong, negative associations between the percent of population living in urban areas and four OCSE performance indicators.[12] Garfinkel, Heintze, and Huang (2000) found that custodial parents living in central cities receive less child support than similarly situated custodial parents who do not.

c. Programmatic variables

Our review of the literature indicates that a number of child support programmatic variables appear to affect performance.

IV-D Staffing and Spending. Fishman et al (2000) found the number of full-time equivalent (FTE) staff per IV-D case was associated with higher rates of paternity and order establishment. The study also found IV-D expenditures per case were negatively associated with OCSE's cost-effectiveness measure. Garfinkel, Heintze, and Huang (2000) found that increased expenditures could improve enforcement, but only if a state had a requisite number of CSE laws in its statutes. If the state has the requisite laws in place, each additional $100 per capita spent on child support enforcement translates into a four percent increase in income for custodial parents. Additionally, Sorensen and Halpern (1999) estimated that IV-D spending per single mother is associated with higher rates of support receipt for never-married mothers and lower rates of support receipt for previously married mothers. The study also found statistically significant, positive effects of specific program policies, including the $50 pass-through,[13] in-hospital paternity establishment programs, presumptive child support guidelines, and automatic wage withholding.

Structure and Organization of IV-D. Fishman et al (2000) found no relationship between the degree of program centralization and performance. The study also examined the effects of universality on IV-D agency performance. A program that serves every custodial parent in the state that is potentially eligible to receive child support—regardless of his or her eligibility for TANF—would be considered fully universal. The study found that universality is positively associated with the paternity establishment and cost-effectiveness performance measures.

2. Expert Discussions

After reviewing the academic literature, we had conversations with a range of federal, state, and local governmental and private-sector experts on child support enforcement (see ***Appendix A*** for a list of interviewees). Based on these interviews, we assembled a candidate list of additional economic and demographic variables to use in our analysis of state-level performance.

Poverty and Welfare Status. Several respondents suggested including poverty measures in the study, hypothesizing that child-support performance is *inversely* correlated with a state's poverty rate. The poverty rate is one measure of the state's economic position and may serve as an indication of the relative difficulty that non-custodial parents have in securing jobs and

[12] Paternity establishment, cases with orders, collections on arrears, cost-effectiveness.

[13] After the 1996 welfare reform law was enacted (Personal Responsibility and Work Opportunity Reconciliation Act) states no longer had to pass through the first $50 of child support collections.

paying support. Poverty rates are also directly related to TANF participation, and therefore, are likely correlated with IV-D participation rates. Candidate measures include the percent of the total population in poverty, the percent of children in poverty, and the percent of population/children receiving TANF or Food Stamps.

Fertility and Marital Status. Experts also pointed to a number of demographic factors that likely affect performance—most notably the martial status of the custodial parent. Consistent with previous research, respondents contend that states with a higher share of never-married mothers on their IV-D caseload will show weaker performance. Specific measures include non-marital birth rates among women aged 15-44, percent of children born to unmarried mothers during the previous 18 years, and percent of children born to teen mothers during the previous 18 years.

3. Data Assembly and Model Development

Following our review of the academic literature and expert discussions, we assembled data for the majority of the recommended variables. In a limited number of instances, we departed from the suggestions of experts if, upon further consideration, we did not agree that a theoretical relationship existed between the variable and child support performance. Examples include general state tax collections per capita, state religious profiles, and state's proximity to the US-Mexican border. Moreover, experts recommended several factors for which data were not readily available: proportion of single parents divorced versus never married, percent of non-custodial parents who are remarried, and average educational attainment of non-custodial parents. After culling the list, we selected 55 variables that would be tested in the multivariate regressions (see ***Appendix B*** for a comprehensive list of explanatory variables and a list of variables not included in the study).

- Economic variables included 19 measures of state poverty and welfare, earnings and income levels, rates of job growth, and unemployment.

- Demographic variables consisted of 22 measures of migration, fertility, race, ethnicity, household composition, and age profiles.

- Programmatic variables included 36 measures that tracked staffing and expenditure levels, program universality, state and county supervision, and enforcement and establishment processes.

We developed our models systematically by first selecting a list of explanatory variables that we believed best explained each performance indicators, based on our reading of the academic literature and conversations with experts. As discussed above, we developed six distinct models—two for paternity establishment and one for each of the other performance indicators:

- IV-D paternity establishment;

- Statewide paternity establishment;

- Percent of cases with orders;

- Percent of current support due that is paid;
- Percent of cases paying toward arrears;
- Cost-effectiveness.

At the outset of this project, audited data was available for only FY 1999, so we essentially had 51 possible observations for each performance factor. We had fewer observations for the paternity establishment measure because states can define the measure in two different ways, and they are evenly split between those reporting paternity establishment statewide and establishment within the IV-D system. Additionally, six states failed to provide audit trails for any of their performance measures in FY 1999, so we elected not to use their data.

When OCSE released the audited FY 2000 performance data, we re-ran the models using updated explanatory variables using the 2000 data. Ultimately, to develop our final models, we pooled the performance data for FY 1999 and FY 2000, so most states had two observations for each performance score. Pooling the data across the two years more than doubled the number of observations and yielded more stable and statistically robust models.

During our initial modeling efforts, we included at least one explanatory (or dependent) variable from each of the following major categories: poverty/welfare; earnings/income; unemployment/job growth; fertility; race/ethnicity; household composition/population age profiles; staffing/expenditures; program universality; and program structure/supervision. After reviewing the results of these initial efforts, we substituted explanatory variables—within major categories—to see to if the new combination improved our prediction of state performance. For example, we would substitute rates of child poverty for overall poverty or overall unemployment rates of non-employment specific to males.

Through this method, we discovered that certain variables performed well on their own but not in combination with related variables with which they were correlated. For example, indicators of poverty are correlated with rates of employment or unemployment. In such instances when we used both measures, the models had difficulty determining relationships between the variables, and consequently rendered both statistically insignificant. We ultimately selected the explanatory variable that yielded the best prediction of performance and dropped the related variable.

In addition, we found that many of the candidate variables did not perform well under any of our specifications. For example, the variables for race and ethnicity typically were not statistically significant and were unstable. Similarly, the number of self-employed workers, percent of population incarcerated, and average TANF household size failed to show stable associations with performance across models.

Our final six models relied on different combinations of 13 explanatory variables:

- Personal income per capita;
- Poverty rate;
- Percent of males aged 20-64 not working;

- Rate of job growth;
- Percent of population living in urban areas;
- Percent of TANF case heads under age 30;
- Percent of IV-D cases currently participating in TANF;
- Percent of IV-D cases that have never participated in TANF;
- Number of IV-D cases per full-time equivalent (FTE) staff;
- IV-D expenditures per case;
- Population stability (percent of people living in same house 1999 and 2000);
- Judicial or administrative order establishment process;
- Audit pass/failure indicator.

Each of the six models had at least one economic, one demographic, and one programmatic variable. None of the six models used all 12 economic, demographic and programmatic variables; all used the audit pass/fail indicator. We provide details on the performance indicators and explanatory variables in ***Section III***.

C. Limitations

Our analysis has several limitations. First, with respect to data quality, the program performance data series are, in some cases, relatively new, and states are in the process of refining their data collection and reporting methods. OCSE has audited the performance data for both FY 1999 and 2000, and while states are showing signs of improvement in their reporting, they still generally struggle with three variables in particular: paternity establishment percentage, cases paying toward arrears, and current collections. ***Exhibit II.1*** reports the number of states that failed the data reliability audit for each indicator during FYs 1999 and 2000.

Exhibit II.1

Performance Measure Audit Failure Rates: 50 States and Washington, D.C.

Performance Indicator	States Failed in 1999	States Failed in 2000
Cases with Orders	6	2
Collections on Current Support	12	7
Collections on Arrears Due	12	7
Cost Effectiveness	1	1
Paternity Establishment, IV-D	7	12
Paternity Establishment, Statewide	9	1

Source: Office of Child Support Enforcement

To correct for the most serious instances of missing or miscalculated data, we dropped certain states from our analyses. The ongoing problems with data quality should be expected at this early stage of implementation. Congress chose to phase-in the new incentive system over time in part because of concerns about states' abilities to report data for the performance measures. When more reliable data become available for those states, we encourage researchers to replicate this analysis. We expect that in doing, so researchers might draw somewhat different conclusions about the associations between state CSE performance and economic, demographic, and programmatic variables.

In addition to data quality, we were also concerned about omission of potential determinants of CSE performance for which we had no measures. For example, we know that in addition to the number of CSE enforcement staff in each state, the quality of the staff and management also affect performance. Likewise, the functionality of a state's computer system should affect performance, but we were unable to rank or score the relative quality of state systems. In short, we can point to a number of factors that may affect performance that we have knowingly omitted from the analysis. To the extent that those omitted variables are important in explaining CSE performance, our findings may be biased, as our models will assign the effects of these omitted variables to the variables that we did include. We did not attempt to correct for this bias and urge readers to consider it when interpreting our results.

Our results may also be influenced by "pre-test bias." We used simple correlations between a candidate roster of explanatory variables and our dependent variables to inform our selection of explanatory variables for our regression model. Specifically, we included those explanatory variables that were highly correlated with our dependent variables and avoided using pairs of variables that were highly correlated with each other. Once we had determined our base regression model, we also conducted a series of sensitivity analyses, adding and subtracting individual explanatory variables to determine the importance of those variables. Both of these selection procedures may contribute to pre-test bias in our findings. Pre-test bias means that we are more likely to find statistically significant associations between our explanatory and dependent variables than we would otherwise.

Finally, our statistical models rely on a relatively limited number of observations. We mitigated this liability by pooling data across FY 1999 and FY 2000, which generated up to 96 observations for each performance measure. In the future, researchers will benefit from additional years of data, which will allow time-series analyses and pooling over larger numbers of years.

III. DESCRIPTION OF THE STUDY VARIABLES

A. Performance Measures (Dependent Variables)

The primary goal of the study is to determine if variations in CSE performance across states are based on differences in economic, demographic, and programmatic factors.[14] To date, few studies have attempted to analyze the performance of CSE programs due, in part, to the absence of appropriate measures of performance.[15] For the purposes of this study, we define program performance by five measures that states reported to OCSE in FY 1999 and FY 2000. OCSE used the FY 2000 measures to calculate incentive payments under CSPIA.

Below we provide the definition of the five CSE performance measures. It is important to note that OCSE has taken steps to standardize the caseload data among states. For example, OCSE excluded cases for which a state had no legal jurisdiction (e.g., international and tribal cases).

1. Paternity Establishment Percentage (PEP)

The first performance measure is based on the Paternity Establishment Percentage as defined in the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA). Under the new incentive formula, states use one of two measures: (1) a IV-D (or "caseload") paternity establishment measure (IV-D), or (2) a statewide paternity establishment measure (statewide). It is defined as follows:

$$\text{Paternity Establishment Percentage- IV-D} = \frac{\text{Total number of children in IV-D caseload in the Fiscal Year or, at the option of the State, as of the end of the Fiscal Year who were born out-of-wedlock with paternity established or acknowledged}}{\text{Total number of children in the IV-D caseload who were born out-of-wedlock as of the end of the prior Fiscal Year}}$$

[14] This section draws from U.S. Department of Health and Human Services. January 1997. *Incentive Funding Work Group: Report to the Secretary of Health and Human Services.*

[15] For example, it has been only within this decade that states measured the percentage of children on their caseloads for whom they had established paternity.

$$\text{Paternity Establishment Percentage- Statewide} = \frac{\text{Total number of minor children in the state born out-of-wedlock and paternity established or acknowledged during the Fiscal Year}}{\text{Total number of children in the state born out-of-wedlock in the previous Fiscal Year}}$$

During FYs 1999-2000, the median IV-D paternity establishment score was 67.4 percent, and the statistic ranged from a low of 1.4 percent to a high of 180.9 percent. OCSE deemed the scores at low and high ends of the range unreliable. By contrast, the median score for states submitting the statewide paternity establishment version was 92.1 during 1999-2000 and range from 52.9 to 251.7. Unlike other performance indicators, a paternity establishment score in excess of 100 percent is feasible if a state establishes a large number of backlog cases from prior years. From an analytical perspective, this performance variable was the most problematic for two reasons.

First, as just noted, the federal government gives states the option to report the statistic for the IV-D caseload or for the state as a whole. In FY 1999 and 2000, states were split almost evenly between submitting the IV-D and statewide measures.[16] Second, the measure had the highest rate of audit failures because of poor data quality, with 16 states submitting data that OCSE deemed unreliable in FY 1999 and 13 states in 2000. Because it is inappropriate to combine scores from statewide and IV-D states, few quality data points were available for each of the paternity establishment (IV-D and statewide) analyses.

2. Percentage of IV-D Cases with Orders for Support

The second indicator measures the percentage of cases in the IV-D caseload that have orders for support. OCSE defines the measure as follows:

$$\text{Percentage of IV-D Cases with Orders for Support} = \frac{\text{Number of IV-D cases with orders for support during the Fiscal Year}}{\text{Number of IV-D cases during the Fiscal Year}}$$

Note that the IV-D caseload—which is the denominator in this indicator as well as a component of the following two CSE performance indicators—is not as straightforward as it may seem. For example, certain types of cases, such as interstate cases, will be counted in two or more states' caseloads.

[16] In both FYs 1999 and 2000, 25 states and the District of Columbia submitted the statewide measure and 25 states submitted the IV-D measure. Guam, Puerto Rico, and the Virgin Islands submitted the statewide measure but were not part of the analysis.

During 1999-2000, the median cases with orders score was 66 percent and scores ranged from a low of 26 percent to a high of 93 percent. In FY 1999, 6 states failed the audit on the measure. In FY 2000, two states failed the audit.

3. IV-D Collection Rate for Current Support

The third performance indicator measures the proportion of current support due that is collected on IV-D cases. The proportion is expressed by the following formula:

$$\text{IV-D Collection Rate for Current Support} = \frac{\text{Dollars collected for current support in IV-D cases}}{\text{Dollars owed for current support in IV-D cases}}$$

During 1999-2000, the median score on the indicator was 53 percent and ranged from 15 percent to 77 percent. In FY 1999, 12 states failed the audit on this measure. In FY 2000, seven states failed the audit.

4. Percentage of IV-D Cases with Collections on Arrears

The fourth indicator measures state efforts to collect money from cases with an arrearage. The measure specifically counts paying cases—and not total arrears dollars collected—because states have different methods of handling certain aspects of arrears cases. The measure is calculated as follows:

$$\text{Percentage of IV-D Cases with Collections on Arrears} = \frac{\text{Number of IV-D cases with at least one payment toward arrears}}{\text{Number of IV-D cases with arrears due}}$$

OCSE audit reports suggest that states continue to struggle with its measurement. During 1999-2000, the median score on the indicator was 57 percent. Scores ranged from 30 percent to an infeasible 145 percent. In FY 1999, 12 states failed the audit on the measure. FY 2000 saw an improvement, with only seven states failing the audit.

5. Cost-Effectiveness

The fifth measure assesses the total dollars collected in the CSE program for each dollar spent. The equation for cost-effectiveness is the following:

$$\text{Cost-Effectiveness} = \frac{\text{IV-D dollars collected}}{\text{IV-D dollars expended (federal and state shares)}}$$

The ratio has long governed state incentive payments, although the definition has changed somewhat, and consequently data quality is good. During FY 1999 and 2000, only one state failed the audit each year. States ranged from cost-effectiveness ratios of $1.21 to $8.41.

B. Factors Associated with Performance (Explanatory Variables)

The models' explanatory variables fall into three key categories: economic, demographic, and programmatic. As indicated in the previous section, we tested each of the 55 variables listed in ***Appendix B***. In this section, we discuss only the 12 we used in our final model for each performance indicator.

The variables used in our analyses, and the years for which the data are available, are listed in ***Exhibit III.1***. For the economic and demographic variables, we relied on secondary data sources, such as tables published by the Census Bureau, the Department of Labor's Bureau of Labor Statistics, and the Department of Commerce's Bureau of Economic Analysis. The programmatic variables were available from OCSE data. ***Appendix C*** lists the state-level data used in the analysis.

Ideally, we would use 1999 data in our 1999 performance models and 2000 data in our 2000 models. Data for 1999 and 2000 was available for the child support program variables. However, because we relied on disparate sources for the economic and demographic variables, we were limited in the timeliness of the data. Additionally, our need for state-level data, as opposed to aggregate national data, further limited our data options. For instance, while data on poverty rates is available for the nation for our study years, state-level data is reported in three-year averages, due to the Current Population Survey's small sample size for a number of states.

Exhibit III.1

Economic, Demographic, and Programmatic Variables

Variable	Most Recent Data Available; Source
Poverty Rate	1998-2000; U.S. Bureau of the Census, Current Population Survey
Personal Income Per Capita	2000: U.S. Department of Commerce, Bureau of Economic Analysis
Percent Males 20-64 not Employed	2000; U.S. Department of Labor, Bureau of Labor Statistics; Census Bureau Current Population Survey
Job Growth	1999-2000, U.S. Department of Labor, Bureau of Labor Statistics,
Percent Population Living in Urban Areas	1990; Census Bureau, Decennial Census
Population Stability	1999-2000; Census Bureau 2000 Supplemental Survey
TANF Heads under Age 30	1999; Administration for Children and Families, U.S. Department of Health and Human Services
Number of Cases per FTE	2000; OCSE
IV-D Expenditures per Case	2000; OCSE
Program Universality	2000; OCSE
Current TANF Recipient	2000; OCSE
Judicial or Administrative Order Establishment	1997 survey, updated 2001; Center for Law and Social Policy

1. Economic Variables

a. Poverty Rate

The state poverty rate variable is a well-known indicator that divides the number of people living in households with income below the federal poverty threshold by the total number of people living in the state. We used the U.S. Census Current Population Survey three-year average estimates for poverty.[17] State poverty rates ranged from 7.3 percent (Maryland) to 22.7 percent (District of Columbia). The median score was 11.2 percent. We hypothesize that a higher level of poverty is associated with weaker child support performance.

b. Personal Income Per Capita

This variable divides personal income received by state residents by the state's total non-institutionalized population. During 1999-2000, the measure varied from a low of $20,013 (Mississippi) to a high of $40,870 (Connecticut). Median per capita personal income for the period was $26,840. We hypothesize that lower personal income per capita—evidence of a less robust economy—will translate into weaker child support performance.

[17] We used 1997-1999 data for the FY 1999 regressions and 1998-2000 data for the FY 2000 regressions. We used three-year averages rather than single year averages because averaging poverty rates over several years improves the estimates' reliability.

c. Percent of Males Aged 20-64 Not Employed

Our third economic variable is related to a male unemployment rate but also captures men who are out of the labor force. Specifically, the measure divides the non-institutionalized population of males between the ages of 20 and 64 who are not working by the total population of non-institutionalized males living in the state. We designed the measure to capture economic conditions facing non-custodial parents, the majority of whom are male and between the ages of 20 and 64.[18] During 1999-2000, the statistic varies from a low 10.3 percent (Nebraska) to a high of 26.2 percent (West Virginia). The median stood at 15.1 percent. We hypothesize that a larger proportion of males not working will be associated with weaker child support performance. Because the factor is a proxy for the non-custodial parent's ability to pay child support, it should have a stronger relationship with the payment-related measures: collection ratio, percent of cases paying on arrears, and cost-effectiveness.

d. Job Growth

Our final economic variable measures the rate of job growth in the state during in the previous year, using labor force data from the Bureau of Labor Statistics. The median state experienced a job growth rate of 1.8 percent. The statistic varies from average declines of –0.9 percent (Nebraska) to growth of 5.5 percent (New Hampshire). We hypothesize that higher job growth rates will be associated with stronger child support performance. Higher growth rates are correlated with more job starts and lower unemployment, which give enforcement workers additional opportunities to locate absent parents and withhold wages.

2. Demographic Variables

a. Percent of Population Living in Urban Areas

This variable measures the number of persons residing in urbanized areas in 1990 divided by number of residents in state in 1990.[19] An urbanized area is defined by the Census Bureau as a "central place" and the adjacent densely settled surrounding "urban fringe" that together have a minimum of 50,000 people. The variable ranges from 15 percent in Vermont—our least urbanized state—to 100 percent in the District of Columbia. The median state has 50 percent of its population living in urban areas. Based on findings from Fishman (2000) and Garfinkel (2000), we anticipate that a higher share of the population living in urban areas will be associated with weaker program performance.

[18] We tested a similar measure that captured non-employment for males aged 20 to 44, which typically exhibited less robust and stable results.

[19] This measure is based on Census data. At the time of this report's publication, 2000 Census data on urbanicity was not yet available.

b. Population Stability

This demographic measure, drawn from the Census 2000 Supplemental Survey, reports the share of a state's population that lived in the same home one year before the survey was taken.[20] States with high in- or out-migration show lower percentages for this measure. In 2000, population stability ranged from a low of 76 percent in Nevada to a high of 89 percent in New York. Montana and North Dakota, the median states, registered 84 percent. We hypothesize that states with less stability have a more difficult time locating non-custodial parents as they move from house to house within the state or across state borders. Moreover, states with unstable populations are likely serving a higher share of custodial families who have recently moved and who are associated with non-custodial parents who live in a different county or state. Given these dynamics, we expect the population stability variable to be positively correlated with performance. That is, a higher stability measure should be associated with better child support performance—holding other factors constant. The factor has a theoretical relationship with all five performance measures.

3. TANF Heads under Age 30

This measure is drawn from Temporary Assistance for Needy Family (TANF) administrative data. It is defined as the proportion of all case heads who are under age 30. In FY 1999, it ranged from a low of 34.5 percent in California to a high of 63.8 percent in Alabama. We hypothesized that a larger proportion of young TANF heads would be associated with weaker CSE performance.

3. Programmatic Variables

a. Number of Cases per Full-Time-Equivalent Staff (FTEs)

Taken from OCSE administrative data, we define this variable as the cases at the end of the Fiscal Year divided by the number of full-time equivalent IV-D staff in the state. The number of cases per FTE does not reflect the caseload of frontline workers, but the caseload relative to all IV-D staff combined. As noted above, the denominator might include double counting of certain types of cases (e.g., interstate). In addition, the numerator does not include those child support staff, particularly those in the judicial system, who work on child support issues but are not paid by the IV-D program (e.g., judges). During 1999-2000, cases per FTE ranged from 145 in Utah to 798 in South Carolina. The median state had 287 cases per FTE.

Program observers have speculated that program performance is associated with the relationship between the number of CSE staff employed by a state and the number of cases in the state. A

[20] The Supplemental Survey provides an early look at a number of characteristics of the population in 2000, including economic, social, and housing characteristics. The results are available for 50 states, the District of Columbia, and counties and cities with populations greater than 250,000.

number of policymakers and commissions, including the U.S. Commission on Interstate Child Support, have called for studies on the issue.[21]

b. IV-D Expenditures per Case

In addition to theories about staffing outlined above, some observers believe the amount of total resources devoted to the IV-D agency on a per case basis is associated with performance. The key difference between this measure and the previous one is that expenditures per case captures information on a state's spending on automated systems and staff salaries, as well as other expenditures (e.g., lab costs). During 1999-2000, Indiana spent the least per case ($98) and Minnesota spent the most ($526). The median state spent $249 per case. We anticipate expenditures per case have a positive relationship with all but one performance indicator: the cost-effectiveness ratio.

c. Program Universality (Percent of IV-D caseload on TANF now; Percent of IV-D caseload never on TANF)

IV-D program officials have hypothesized that the composition of a state's caseload affects a state's program performance. Specifically, some suggest that performance improves as the program serves a greater share of the population that never received cash assistance. These never-on-welfare families report higher collection rates of current support.[22] By contrast, caseloads comprised of current or former welfare recipients tend to be more difficult to serve—perhaps in part because a larger share of the parents in these families have lower incomes, have less education, and are never married. Our analysis includes two indicators that measure the relative difficulty of a state's IV-D caseload.

The first indicator reports the share of a state's IV-D caseload that is *currently* enrolled in the TANF program. Idaho reported the lowest share of its IV-D caseload currently on TANF (5 percent). Rhode Island had the highest share (45 percent). In the median state, 17 percent of IV-D cases were actively receiving TANF benefits.

A second indicator, related to the first, measures the share of a state's IV-D caseload that has *never* received TANF benefits. States began reporting their "never assistance" caseloads to OCSE beginning in FY 1999. During 1999 to 2000, the statistic ranged from a low of 15 percent in Rhode Island to a high of 68 percent in Indiana. Given these statistics, we would consider Indiana's program to be significantly more "universal" than Rhode Island's.

d. Judicial or Administrative Process for Order Establishment

Program observers have hypothesized that the method by which a state establishes child support orders may be associated with one or more of the performance measures. Relative to other

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[21] Many states are cutting IV-D staff due to budgetary constraints, thus the cases per FTE variable does not necessarily reflect OCSE preferences.

[22] See Lyon, Matthew. May 1999. *Characteristics of Families Using Title IV-D Services in 1995.* US Department of Health and Human Services, Assistant Secretary for Planning and Evaluation.

aspects of the program, states and localities have flexibility in selecting the forum and participants of the establishment process. A highly judicial process involves a formal court setting with a judge presiding and an attorney representing the IV-D agency. In a highly administrative process, the state establishes orders in a IV-D office, generally without an attorney involved. Between these two extremes are a number of variations. As part of a concurrent study for OCSE, the project team developed a taxonomy, ranging from 4 (highly administrative) to 16 (highly judicial) that characterized each state's establishment process. We detail the method and individual state scores in ***Appendix D***. We anticipate that administrative processes, which observers believe are faster, may have a positive association with cases with orders. On the other hand, observers note that establishing an order through the court and in the presence of a judge may lead to higher compliance, which could result in judicial processes showing better performance on the collection and arrearage indicators.

IV. STUDY RESULTS

A. Simple Correlations

A key step in designing a regression model is gaining a better understanding of how the data that underlie the analysis interrelate. To do so, we estimated simple correlation coefficients, which measure the strength and direction of the relationship between two variables. In doing so, we focused on the following questions:

- Are the dependent variables (i.e., performance indicators) correlated with one another? We examined this issue to determine whether improvement in one performance area may be related to improvement in another area.

- Are the explanatory variables correlated with the dependent variables? If an explanatory variable is correlated with the dependent variable, there is an increased likelihood that the variable will prove to be important in the regression model. However, it is also the case that variables that appear promising based on a correlation statistic may show no relationship with the dependent variable in a regression model.

- Are the explanatory variables correlated with one another? While regression analysis is designed to isolate the effects of each variable, the method suffers if two explanatory variables are highly correlated. That is, if two variables move in concert, the model has difficulty determining their independent effects on the dependent variable.

We used combined 1999 and 2000 data. We present the findings of the correlation analyses in ***Appendix E***. Below, we briefly summarize correlations among the dependent variables and the independent variables ultimately used in the regression analyses.

1. Correlations Among Dependent Variables

As ***Exhibit IV.1*** depicts, we found little positive or negative correlation between the dependent variables, which suggests that the level of performance on one measure does not appear to be associated with the level of performance on another. There are two exceptions to this general finding. First, states that have a higher percentage of IV-D cases with orders for support also had a higher collection rate for current support (correlation coefficient of 0.49). Second, cost-effectiveness appears to be correlated with cases with orders (0.43) and current collections (0.40).

Exhibit IV.1

Correlations among Dependent Variables

	PEP IV-D	PEP Statewide	Cases with Orders	Current Collections	Collections on Arrears	Cost-Effectiveness
PEP IV-D	1.0	.044	(.002)	.018	(.189)	(.150)
PEP Statewide	.044	1.0	.236	.213	.054	.185
Cases with Orders	(.002)	.236	1.0	**.494**	.273	**.427**
Current Collections	.018	.213	**.494**	1.0	.178	**.402**
Collections on Arrears	(.189)	.054	.273	.178	1.0	.064
Cost Effectiveness	(.150)	.185	**.427**	**.402**	.064	1.0

2. Correlations Between Explanatory Variables and Dependent Variables

Correlations among all explanatory variables we considered for this analysis and our dependent variables suggested that certain variables were likely to perform well in the regression analysis (i.e., correlation of greater than 0.4). Some variables were economic. For example, the state poverty rate and the proportion of men ages 20 to 64 not working were highly and negatively correlated with the proportion of cases with orders. (See ***Exhibit IV.2***.)

A number of the relationships between the variables were program-related. Specifically, we found that states with higher numbers of cases per FTE (thus lower overall staffing levels) had a lower percentage of IV-D cases with orders for support, as well as a lower percentage of current collections on orders. Conversely, states with higher expenditures per case had a higher percentage of cases with orders. Moreover, the process for establishing orders appears correlated with order establishment: states with more judicial processes had a lower percentage of cases with orders. One economic measure—the percentage of males aged 20-64 who were not employed—was negatively correlated with the percentage of IV-D cases with orders for support. These correlations are all in the direction we would expect. (See ***Appendix E*** for all correlations.)

Exhibit IV.2

Key Explanatory and Dependent Variable Correlations

Explanatory variable…	…is correlated with
Higher state poverty	Lower percent of cases with orders: (.504)
More men 20-64 not working	Lower percent of cases with orders: (.402)
Higher cases per FTE	Lower percent of cases with orders: (.602) Lower percent of current collections: (.413)
Higher expenditures per case	Higher percent of cases with orders: .548
A more judicial process	Lower percent of cases with orders: (.501)

3. Correlations among Explanatory Variables

Finally, we explored correlations between our independent variables. (See ***Appendix E*** for all correlations.) We tried to avoid using highly correlated independent variables (i.e., correlations greater than 0.4) in the same regression model. Generally, the independent variables were not highly correlated. There were, however, a few exceptions (see ***Exhibit IV.3***). Men ages 20 to 64 not working was highly (positively) correlated with the state poverty rate. Expenditure per case average was highly (negatively) correlated with the state poverty rate. The state poverty rate was highly (negatively) correlated with per capita personal income. The percentage of the population in urban areas was highly (positively) correlated with per capita personal income. And, cases per FTE and expenditures per case were highly (negatively) correlated. These highly correlated pairs were not used together in models, with one exception; percent urban and per capita personal income were used in the collections model. Because these variables were frequently mentioned by experts as important factors in child support enforcement performance, we opted to retain them.

Exhibit IV.3

Correlations among Explanatory Variables

Explanatory variable	Correlation
State poverty rate	Positively with men 20-64 not working: .657 Negatively with per capita personal income: (.401) Negatively with expenditures per case average: (.453)
Percent of population in urban areas	Positively with per capita personal income: .684
Cases per FTE	Negatively with expenditures per case average: (.751)

B. Multivariate Regression Analysis

To capture the relationship of each explanatory variable to the performance of CSE programs, we developed six multivariate regression models:

- Cases with orders
- Current collections
- Cases with collections on arrears
- Cost-effectiveness
- Statewide paternity establishment
- IV-D paternity establishment

Unlike the simple correlations described previously, the output from multivariate regression analysis reports the association between the dependent variable (e.g., cases with orders) and an explanatory variable (e.g., percent of males 20 to 64 not employed) *holding all other explanatory variables constant.* For example, one might ask, "How would the proportion of men not

employed in a state affect its cases with orders ratio if the state was typical in every other way?" If designed properly with reliable data, a regression analysis should report an estimated relationship between the explanatory variable and given performance indicator.

As described in detail in ***Section II***, we grouped explanatory variables into categories and subcategories. We systematically tested a number of combinations of explanatory variables. We noted which variables (e.g., percent of population in an urban area) appeared to perform well across models. We then tested this "short list" for each dependent variable. In the end, we had 12 economic, demographic, and programmatic variables across six models.

In addition to selection of independent variables, we had to determine how to treat states that had inconsistent data across performance indicators. There were a number of scenarios:

- A state had no audit trail, thus failed audits on all performance indicators. In 1999, six states fell into this category.[23] We dropped these states from all the regression models for both years, even through in 2000, no state failed all audits.

- States failed some audits. In 1999, for example, the number of states failing an audit ranged from 1 for cost-effectiveness to 16 for paternity establishment. States that provided an audit trail but failed an audit were included in the regressions. To capture a state's pass or fail on a particular performance measure, we assigned each state a "dummy variable." If the state passed the audit, it received a "1", and if it failed, it received a "0". Use of a dummy variable enabled us to observe whether states that fail their audits on a particular indicator as a group systematically had higher or lower rates on each performance indicator than states that passed.

We ran single year regressions using 1999 and 2000 data. Then we pooled the data for both years to increase the number of observations. We report on the findings from our panel data analyses here; the findings for all of the regression models are reported in ***Appendix F***. For each model, we report a coefficient for each of the explanatory variables used in that model. The sign of the coefficient indicates the variable's positive or negative association with the dependent variable. The actual value of the coefficient is difficult to interpret without reviewing the data that underlie the analysis, which we will do below. We also report the coefficient's statistical significance. A coefficient that is statistically significant at the one-percent level implies that—with 99 percent certainty—the association between the explanatory variable and dependent variable is not equal to zero. We have more confidence in the reported relationships of variables that are statistically significant at the one-percent level than those that are significant at the five- or ten-percent levels. In those cases where the coefficient is *insignificant*, we can not be certain—in a statistical sense—that an association between the explanatory and dependent variables actually exists.

In addition to the coefficients on the individual explanatory variables, we report a statistic called the "R^2" for each of the models. The statistic is an overall measure of a model's explanatory power. Specifically, it measures the percentage of variation in the dependent variable that can be explained by the explanatory variables. The statistic varies from 0.73 in the cases with orders model to 0.33 in the paternity establishment (statewide) model. In other words, our explanatory

[23] California, Indiana, Kansas, Nevada, Ohio and Pennsylvania.

variables explain about 73 percent of the variation in the cases with orders performance indicator and 33 percent of the variation in the paternity establishment (statewide) indicator.

In the following sections, we describe in more detail the estimated coefficients and their implications.

1. Factors Associated with Cases with Orders

The cases with orders indicator measures the ratio of IV-D cases with orders for support to the number of IV-D cases. Our model consists of six independent variables and a dummy variable that indicates whether the state passed the audit for the measure. The independent variables included were state poverty rate, percent urban, cases per FTE, score on the judicial/administrative taxonomy, population stability, and the proportion of the caseload on TANF. As indicated above, the R^2 was 0.73; thus, our model explains 73 percent of the variation across states for the cases with orders indicator.

Seven of the eight independent variables were significant. State poverty, percent urban, cases per FTE, and judicial/administrative process were significant at the 1 percent level. Two other variables (caseload on TANF and population stability) were significant at the 5 percent level. The coefficient for the dummy on the audit findings was not statistically significant, which implies that states failing the audit did not report performance that was systematically higher or lower than states that passed the audit.

The signs of the coefficients conform with expectations. State poverty, percent urban, cases per FTE, administrative/judicial process and percent of cases currently on TANF are negative. Thus, an increase in these indicators is associated with weaker performance on the cases with orders measure. We describe findings for each of the variables in more detail below.

- *State poverty*. Higher levels of state poverty are associated with lower performance on the cases with orders measure. For each percentage point increase in the poverty rate, the proportion of cases with orders declines about two percentage points. We predict that an increase in the poverty rate from 10 percent to 15 percent would be associated with a 9 percentage point decrease in the cases with orders measure.

- *Percent urban*. A percentage point increase in the proportion of the state's population in an urban area is associated with a 0.22 percentage point reduction in cases with orders. Thus, we predict that an increase in the urbanicity rate from 40 percent to 50 percent would be associated with a 2.2 percentage point reduction in a state's cases with orders score.

- *Cases per FTE*. Our modeling indicates that the number of cases per FTE is associated with weaker child support performance. For example, if a state's cases per FTE increased by 100, from 400 to 500, the model predicts that the state's cases with orders score would fall by 4.4 percentage points.

- *Administrative/judicial process*. An increase of one point on the taxonomy scale—which implies moving incrementally toward a more judicial process—is associated with a 0.97 percentage point decline in cases with orders. Thus, if a state moved from a taxonomy score

of 5 to a taxonomy score of 10 (from a very administrative process to a quasi-judicial process), we predict that the percentage of cases with orders would decline by 4.8 percentage points.

- *Caseload currently on TANF*. A percentage point increase in the proportion of the IV-D caseload currently receiving TANF is associated with a 0.25 percentage point decline in cases with orders. Thus, we predict that an increase in the proportion of the caseload on TANF from 25 percent to 35 percent would be associated with a 2.5 percentage point drop in the cases with orders measure.

- *Population stability*. A percentage point increase in population stability is associated with a 0.87 percentage point increase in cases with orders. Therefore, if a state's stability score increased from 85 percent to 90 percent, we would expect the cases with orders score to increase by 4.3 percentage points.

2. Factors Associated with Percentage of Current Support Collected

The collections on current support indicator measures the ratio of dollars collected for current support to dollars owed for current support. Our model consists of eight independent variables, including a dummy variable that indicates whether or not the state passed the audit on the measure. The independent variables were per capita personal income, percent of males 20 to 64 not working, percent urban, proportion of TANF caseload less than age 30, cases per FTE, population stability, and the proportion of the caseload on TANF. The R^2 was 0.61; thus, our model explains more than 60 percent of the variation observed in the measure across states.

All eight independent variables were significant at the five percent level or better. The signs on the coefficients make sense intuitively. Percent of males 20-64 not employed, percent urban, percent of TANF caseload less than 30, cases per FTE, and percent of cases currently on TANF had negative coefficients. Thus, an increase in these variables is associated with a decrease in current collections. The coefficient on the dummy variable also was negative. This suggests that states that passed the audit reported lower collection rates on average than those that did not. The coefficient on the population stability variable was positive. Each is described in more detail below.

- *Males 20-64 not employed*. A percentage point increase in the proportion of males not employed is associated with almost a one percentage point decrease in current collections. Put another way, we predict that an increase in the proportion of men not employed from 10 percent to 15 percent would be associated with a 5.0 percentage point drop in current collections.

- *Percent urban*. A percentage point increase in a state's urbanicity is associated with a 0.1 percentage point drop in current collections. So, for example, if the proportion of the state population residing in urban areas increased from 50 percent to 60 percent, we predict that current collections would decline by almost one percentage point.

- *TANF less than 30*. A percentage point increase in the proportion of the TANF heads under age 30 is associated with almost a half-point decline in current collections. Thus, if the

proportion of TANF heads under age 30 increased from 50 percent to 60 percent, current collections would decline by 4.5 percentage points.

- *Cases per FTE*. The model's coefficient is –0.02. This implies that an increase of 100 in a state's average caseload per FTE would yield a 2 percentage point reduction in the share of current support due that is collected.

- *Caseload currently on TANF*. A one percentage point increase in the proportion of the IV-D caseload on TANF is associated with a 0.21 point drop in current collections. Thus, if the proportion of the caseload on TANF increased from 40 percent to 50 percent, current collections would decline by about 2 percentage points.

- *Per capita personal income*. The model finds that an increase in per capita income is associated with an increase in collections. Specifically, our findings suggest if a state's per capita income increased by $5,000, the state's performance on current collections would improve by 2.9 percentage points.

- *Population stability*. A one percentage point increase in the stability measure is associated with a 1.1 percentage point improvement in the current collections statistic. Thus, an increase from 80 percent to 85 percent of state residents who remained in their homes from one year to the next would be associated with a 5.5 percentage point increase in current collections.

3. Factors Associated with Cost-Effectiveness

Cost-effectiveness is a measurement of the state's total distributed collections divided by total state administrative costs. Our explanatory model consists of seven independent variables: percent of males aged 20-64 not employed, percent urban, percent of IV-D caseload currently receiving TANF, percent of TANF heads under age 30, average expenditures per IV-D case, population stability, and a dummy variable that indicates whether the state passed the audit for the measure. All of the independent variables were statistically significant at the five percent level or better. In fact, with the exception of the audit variable, all were significant at the one percent level. The model reported an R^2 statistic of 0.55, which indicates that the independent variables explained more than one-half of the variation in the cost-effectiveness ratios reported by states during 1999-2000. We detail our findings for each of the independent variables below.

- *Males 20-64 not employed*. A one percentage point increase in the share of males aged 20-64 who do not work is associated with a $0.13 decline in the cost-effectiveness ratio. Therefore, we predict that moving from 10 to 15 percent on this variable would be associated with a $0.66 decline in cost-effectiveness.

- *Percent urban*. A percentage point increase in the share of a state's population living in urban areas is associated with a modest $0.01 decline in cost-effectiveness. Thus, if the state's urbanicity rate increased from 40 percent to 50 percent, we predict the cost-effectiveness ratio would decline by $0.10.

- *TANF less than 30*. A higher share of TANF cases headed by people under age 30 is associated with lower cost-effectiveness. A coefficient of –.10 suggests that an increase in the

proportion of young heads from 40 percent to 50 percent is associated with a $1.00 decline in the cost-effectiveness ratio.

- *Caseload currently on TANF*. A higher share of IV-D cases currently receiving TANF is associated with lower cost-effectiveness. For each percentage point increase in the share of child support cases that receive TANF, the model predicts a $0.05 reduction in cost-effectiveness. Thus, if the percentage of IV-D cases currently on TANF increased from 30 percent to 40 percent, the cost-effectiveness ratio would decline by $0.50.

- *Expenditure per case*. Higher expenditures per case are associated with lower cost-effectiveness. The coefficient is 0.0047; thus, a $100 increase in spending per case would decrease the cost-effectiveness ratio by $0.47.

- *Population stability*. A more stable population is associated with a higher cost-effectiveness ratio. Specifically, each percentage point increase in the stability variable is associated with a $0.15 improvement in cost-effectiveness.

- *Audit pass*. The dummy indicating a state passed the audit on cost-effectiveness suggests that—holding other factors constant—passing states reported cost-effectiveness ratios that were about $1.71 higher than states that did not pass the audit.

4. Factors Associated with Percent of Cases Paying Toward Arrears

Relative to other performance indicators discussed above, we had difficulty developing reliable explanations of the variations between states in the percent of cases paying toward arrears. This could be due—in large part—to the states' on-going difficulty in measuring it. Two variables that showed significant relationships in other models proved important here as well: poverty rates and the percent of the state's population living in urban areas. In addition, the rate of job growth in a state proved a significant predictor of a state's performance on arrears. The share of IV-D cases on TANF and passing the federal audit were included in the final model, but the findings were not statistically significant. Together, five variables explained about 34 percent of the variation in arrearage score submitted by states. Below, we outline our specific findings for the significant variables.

- *State poverty*. Higher state poverty is associated with lower performance on cases paying towards arrears. A one percentage point increase in the state's poverty rate is associated with a 1.1 percentage point decrease in the share of cases paying toward arrears. Thus, we predict that an increase in the poverty rate from 15 percent to 20 percent would result in a 5.5 percentage point decline in cases paying towards arrears.

- *Job growth*. High job growth is positively associated with cases paying toward arrears. A one percentage point increase in the rate of job growth in a state is associated with a 2.9 percentage point increase in the arrears performance measure.

- *Percent urban*. A one percentage point increase in the proportion of the state's population in an urban area is associated with a 0.15 percentage point reduction in the arrears measure.

Thus, an increase in the urbanicity rate from 40 percent to 50 percent would be associated with a 1.5 percentage point reduction in a state's arrears score.

5. Factors Associated with Paternity Establishment

We had limited success in modeling performance on paternity establishment. Problems arose because of multiple definitions of the indicator, as well as the ongoing difficulty with data quality. First, with respect to multiple definitions, federal law permits states to calculate the measure in one of two ways, statewide or IV-D specific. During 1999-2000, states were split almost evenly between statewide and IV-D measures. For modeling purposes, we considered each measure separately; therefore, we have roughly one-half the observations for each of the paternity measures that we have for other performance indicators.[24] Compounding the problem of limited observations is the fact that federal audits show the data quality is weak for these paternity measures. In 2000, 13 states failed the audit on the paternity measures.

Despite these limitations, we did develop explanatory models and found some informative relationships. The model of the **IV-D paternity measure** consisted of the state poverty rate, share of TANF heads under age 30, share of IV-D cases that has never received TANF, and a dummy variable indicating that the state passed the audit. The final model explained 48 percent of the variation in the scores reported by states. Two variables were statistically significant at the 5 percent or higher level; the audit pass/fail variable was significant at the 10 percent level.

- *TANF less than 30*. A higher proportion of young case heads is associated with lower performance on this measure. Specifically, the model predicts that a one percentage point increase in the share of TANF heads under 30 would result in a 4.3 percentage point decline in the IV-D paternity score.

- *Caseload never on TANF*. The model predicts that a state that increases the share of IV-D cases that *never* received TANF by one percentage point would experience a 0.9 percentage improvement in its IV-D paternity score.

- *Audit pass*. The dummy indicating a state passed the audit on its cost-effectiveness suggests that—holding other factors constant—passing states reported paternity establishment percentages that were 16 percentage points higher than states that did not pass the audit.

For the **statewide paternity measure**, the final model consisted of five explanatory variables: per capita personal income, percent of IV-D cases currently receiving TANF, expenditures per case, population stability, and an audit pass/fail dummy. The model explained about 33 percent of the variance. All the variables exhibited the signs that we expected, and three were statistically significant at the 5 percent level.

- *Caseload currently on TANF*. A higher share of IV-D cases currently on TANF is associated with weaker performance. A one percentage point increase in cases on TANF is related to a

[24] A single model can be used if the coefficients for the interaction terms are the same for both paternity measures and are not significantly different from zero. This was not the case. Thus, we used two separate models.

0.7 point decline in the statewide paternity score. Thus, we predict that an increase in cases currently on TANF from 20 percent to 25 percent of the caseload would be associated with a 3.5 percentage point drop in paternity establishment.

- *Population stability*. A more stable population is associated with higher statewide paternity establishment. We predict that a one percentage point increase in our stability measure yields a 2 percentage point increase in the statewide paternity score.

- *Expenditure per case average*. Higher spending per case appears to be associated with better paternity outcomes. For example, an extra $100 spent per case, on average, boosts the statewide paternity score by 5 percentage points.

6. Conclusions

Despite a relatively limited number of observations and evolving data quality, we found a number of important associations that were consistent with previous findings and expectations of program experts. The coefficients of the explanatory variables are generally reasonable in their magnitudes and are stable when we tested them in models with alternate variables and years.

As noted above, we originally ran our models using only 1999 data. In other words, the models were fitted to this data. When 2000 data became available, we re-ran the models and found that they were generally robust. The sign of the coefficients in each model remained stable. Moreover, many of the variables remained significant at the 10 percent level or higher. For example, in the cases with order model, five variables were significant in 1999; three remained so in 2000. In the collections on current support model, seven variables were significant in 1999, as were five in 2000. In 1999 six of the seven variables in the cost-effectiveness model were significant; in 2000, the same number were significant, but the mix was different. The arrears model had four significant variables in 1999 and two in 2000. The paternity models were not as robust. Although the signs on the coefficients were stable, only one two variables in the IV-D paternity model remained stable in 2000 while none of the four significant variables in the statewide model did so.

We then combined the 1999 and 2000 data, assuming that more observations would strengthen our models. We found significant associations within each of our major variable categories: economic, demographic, and programmatic (see ***Exhibit IV.4***).

Reviewing the economic variables, we found that a higher poverty rate is associated with weaker performance on the cases with orders and arrearage indicators. While poverty rates were not associated with collection rates, a state's personal income per capita was, with higher incomes related to increased shares of current support collected. The rate of working age males not employed was associated with lower collection rates and cost-effectiveness ratios. Finally, the higher the rate of job growth in the state, the better states did on arrearage performance.

Several demographic variables also showed significant and stable relationships with performance. The higher is the share of the state's population that is living in urban areas, the weaker is performance on cases with orders, collection rates, cases paying towards arrears, and cost-effectiveness. A stable population is associated with better performance on the statewide

paternity measure, cases with orders, current collections, and cost-effectiveness. And, a larger proportion of TANF case heads under age 30 appears to be associated with poorer performance in current collections, cost-effectiveness, and paternity establishment (IV-D).

With respect to programmatic variables, the models suggest that, as caseload per worker falls, performance on cases with orders and current collections improves. However, the more a state spends per case, the worse it will fare on the cost-effectiveness measure. Measures of relative caseload difficulty also showed significant associations with performance. The higher is the share of IV-D families that currently receive TANF, the weaker is performance on the statewide paternity, cases with orders, current collections, arrearage, and cost-effectiveness measures. Our measure of judicial and administrative establishment processes proved significant for only one performance indicator—suggesting that states that have administrative processes systematically have a higher percentage of cases with orders.

Not surprisingly, the higher the quality of the performance data, the more reliable and robust were the estimated relationships with explanatory variables. Federal audit data show that the paternity and arrearage measures have proven the most difficult for states to calculate. Given the ongoing reporting problems, our models were able to explain a small fraction of the variation among states for those measures. By contrast, we were able to explain more than 70 percent of the variation among states for the cases with orders measure with the seven explanatory variables selected—a robust result for a cross sectional model.

Exhibit IV.4: Summary of Independent Variables, Combined 1999-2000 Regressions

Independent Variable	Cases with Orders	Current Collections	Cost Effectiveness	Collections on Arrears	IV-D Paternity Establishment	State Paternity Establishment
Personal Income		+++				O
State Poverty	---			---	O	
Males 20-64 not Working		---	---			
Job Growth 1998-1999				+++		
Percent Urban	---	--	---	---		
% TANF Heads under 30		---	---		---	
% IV-D Caseload on TANF	--	--	---	-		--
% IV-D Caseload never on TANF					++	
Cases per FTE	---	---				
Expenditures per Case 1999			---			++
% Pop. in same home 1999-2000	++	+++	+++			++
Judicial Process	---					
Dummy	O	---	++	O	-	O
R^2	0.7320	0.6085	0.5547	0.3395	0.4797	0.3311

Note: 6 states with no audit trails in 1999 dropped from regressions.

Key

+	Positive and significant at 10% level	--	Negative and significant at 10% level
++	Positive and significant at 5% level	--	Negative and significant at 5% level
+++	Positive and significant at 1% level	---	Negative and significant at 1% level
O	In model, not significant		Not in model

V. APPLYING STUDY RESULTS TO INCENTIVE POLICY

The regression models described in the previous section show how various state economic, demographic, and programmatic factors affect states' performance on the five measures specified by legislation to measure performance. In this section, we discuss the rationales for making adjustments to raw outcome measures, suggest one option for making adjustments, and provide illustrations for how an adjustment procedure might work in practice and what the effects of such systems might be. The goal of this chapter is to illustrate one method for making adjustments, but we do not make a policy recommendation for or against making those adjustments. OCSE would need to carefully weight the costs and benefits of any change to the incentive system. On the one hand, state IV-D officials may perceive an amended system as more equitable if they understand the adjustment method and trust the data that underlie it. On the other hand, adjustments would add several complex estimation steps to a process already complicated by a payment cap.

A. Rationale for Adjustments

As might be expected, there is a great deal of variation in the levels of the performance measures across states. For FY 2000, for example, the proportion of cases with orders ranged from 26 percent to 93 percent, and the proportion of current support collected ranged from 35 percent to 76 percent. If we knew for certain that these large disparities all resulted from variation in state effort or effectiveness, then it would be appropriate to use unadjusted outcome measures to assess performance. In reality, however, we know that many factors can affect the outcomes of interest, and it may be desirable to adjust the expectation of satisfactory performance based on these factors.

In describing why adjustments were made to performance standards for local areas under the Job Training Partnership act (JTPA), the U.S. Department of Labor explained the intent of the adjustment practice as follows:[25]

> Performance standards are adjusted to "level the playing field" by making the standards neutral with respect to who is served and to local economic conditions. For example, a [service delivery area] SDA serving a hard-to-serve population would be given a lower standard than an SDA serving a less hard-to-serve population. Although set at different levels, meeting these two standards would require the same level of SDA effort. Similarly, an SDA facing difficult local economic conditions might be given a lower standard than an SDA in a booming economy.[26, 27]

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[25] The Job Training Partnership Act was a federally funded program that provided training and other employment-related services to disadvantaged youth and adults and dislocated workers. JTPA operated between 1982 and 2000 and was one of the first federal programs to have an extensive performance management system in place.

[26] See Social Policy Research Associates (1999). *Guide to JTPA Performance Standards for Program years 1998 and 1999.* Menlo Park, CA: Social Policy Research Associates, p. III-1.

[27] Another use of performance adjustments is to provide incentives to the units of government to change their behavior. For example, OCSE might wish to encourage states to perform better on certain incentive measures.

B. Approaches for Making Adjustments

If the goal is to establish a level playing field, the adjustments should be set to hold the states harmless for factors beyond their control. The regression analyses we have estimated are intended to serve this purpose, although, as we noted earlier in the report, the regression analyses may be biased to the extent that relevant variables are missing or measured with error.

There is one complication to the rules for using the regression analyses to calculate adjusted performance. The regression models include relevant demographic, economic, and programmatic variables, but adjustments to performance should not take into account program decisions that are under the control of the states. If the program variables were omitted from the regression models, the estimates of the impacts of the demographic and economic variables would generally be biased, so it is important to include the programmatic variables (e.g., proportion of caseload on TANF, expenditures per case) in the regressions. In making adjustments to performance, however, no adjustment is made for the programmatic variables. In effect, the regression coefficients of the programmatic variables are set to zero. The programmatic variables omitted from the calculations are cases per FTE (for cases with orders and collections), the variable measuring the state's position on the judicial/administrative scale (for cases with orders), the proportion of the caseload currently on TANF (for cases with orders, collections, arrears, and cost-effectiveness), and expenditures per case (for cost-effectiveness). In addition, the variable in each regression indicating if a state passed the audit is not used in computing adjusted performance.

For each outcome measure, the procedure for calculating adjusted performance is the same. First, the mean national value of each explanatory variable is subtracted from the state's value on that variable. The resulting figure is then multiplied by the regression coefficient for the model except for variables that are considered management variables under the control of the state. For the variables under the states' control, no adjustment is made. Next, these values are summed for all the explanatory variables. Finally, the sum of the adjustments is added to the state's actual value for the variable to obtain the state's adjusted value for the performance measure. For illustrative purposes, ***Exhibit V.1*** depicts a simplified version of this process for the cases with order measure.

One method of encouraging such behavior is to reward states that take desired actions by adjusting their performance up and/or by lowering the measured performance of those states that do not undertake the desired actions. The concept of making adjustments based on policy concerns was suggested as a possibility for the JTPA program. See Burt S. Barnow and Jill Constantine (1988). *Using Performance Management to Encourage Services to Hard-to-Serve Individuals in JTPA.* Washington, D.C.: National Commission for Employment Policy.

Exhibit V.1
Hypothetical Adjustment

Regression includes two variables:
- State poverty
- Cases per FTE

State poverty rate: 18%
National poverty rate: 13%
Difference: 5%

Regression coefficient (2.1) multiplied by difference (5%) = adjustment of 10.5

State cases per FTE: 123
National rate: 110
Difference: 13

Because a programmatic variable, coefficient is set to 0, so adjustment = 0

Total adjustment: 10.5 + 0 = 10.5
Original cases with order score: 67
Adjusted score: 77.5

We compare unadjusted and adjusted performance in several ways for each outcome measure (except paternity establishment):

- We present detailed adjustment calculations for two states for each measure to indicate how the adjustments change the scores and which explanatory factors are most important. *The adjustments are made to the states' FY 2000 scores*.

- We show the raw scores and adjusted scores for all 45 states included in the regression analysis. Again, we use FY 2000 scores for each states.[28]

- We present a scatter diagram showing how closely the adjusted and unadjusted measures correspond. Less scatter is indicative of smaller adjustments being made.

- We compute the Spearman rank-order correlation of the adjusted and unadjusted measures. The Spearman correlation coefficient provides a measure of how much the regression adjustments change the rankings of states; a coefficient of 1.0 indicates that there is no change, and a coefficient of –1.0 indicates that the rankings are completely reversed.

As we noted earlier, the results for the paternity establishment measure are not conducive to this type of adjustment procedure because states are permitted to use two different measures of paternity establishment.

C. Illustrative Adjustments

1. Cases with Orders

Exhibit V.2 shows how the adjusted levels of performance on the cases with orders measure for two states, Arizona and Massachusetts. In this model, there are three variables for which adjustments are made. Arizona provides a good example where state conditions vary from the national average in a manner that leads to an upward adjustment in their score with the approach described here. First, Arizona has an above-average poverty rate (13.53 percent compared to the national average of 11.68 percent). The cases with orders regression model indicates that Arizona's score should be adjusted up by 3.43 points because of this deviation from the national average (–1.85) x (–1.85119) = 3.43. Arizona has a higher than average percentage of its population living in urban areas, 72.5 percent compared to a national average of 51.9 percent, and this also leads to a positive adjustment in their score for this factor of (–20.57) x (–0.22225) = 4.57 points. Finally, Arizona scores below the national average on population stability, and this factor has a positive coefficient in the cases with orders model, so the adjustment is 4.88 x 0.8755 = 4.27 points. Thus, for Arizona, all three factors would tend to depress the state's performance, and using the model would lead to an adjustment of 3.43 + 4.57 + 4.27 = 12.28 points. Arizona's adjusted score would be 69.65 compared to its raw score of 57.37.

Exhibit V.2

Adjusted Levels of Performance: Cases with Orders, FY 2000

FY 2000 National Average: 65.20

State: Arizona
FY 2000 Score: 57.37

Econ/Demographic Variable	National Average	State	Difference	Coefficient	Product
State Poverty Rate*	11.68	13.53	–1.85	–1.85	3.43
Percent Urban*	51.90	72.48	–20.57	–0.22	4.57
Pop. Stability 99-00*	83.58	78.70	4.88	0.88	4.27
% IV-D cases on TANF	18.50	24.41	–5.91	0.00	0.00
Cases per FTE*	317.84	236.32	81.52	0.00	0.00
Judicial/Admin*	12.04	16.00	-3.96	0.00	0.00
Estimated Adjustment					*12.28*
Actual Score					57.37
Adjusted Score					69.65

[28] The same 6 states that were dropped from the regression analysis are not included here (California, Indiana, Kansas, Nevada, Ohio, and Pennsylvania).

Exhibit V.2 (continued)

Adjusted Levels of Performance: Cases with Orders

State: Massachusetts
FY 2000 Score: 67.09

Econ/Demographic Variable	National Average	State	Difference	Coefficient	Product
State Poverty Rate*	11.68	10.17	1.51	–1.85	–2.80
Percent Urban*	51.90	78.61	–26.71	–0.22	5.94
Pop. Stability 99-00*	83.58	86.90	–3.32	0.88	–2.90
% IV-D cases on TANF	18.50	23.56	–5.06	0.00	0.00
Cases per FTE*	317.84	303.18	14.66	0.00	0.00
Judicial Process*	12.04	16.00	–3.96	0.00	0.00
Estimated Adjustment					*0.23*
Actual Score					*67.09*
Adjusted Score					67.32

**Statistically Significant at 10% or better*

The bottom half of the exhibit shows the adjustment process for cases with orders for Massachusetts. For Massachusetts, the adjustments from the regression model for cases with orders leads to a very small adjustment—from a raw score of 67.09 to an adjusted score of 67.32. In this case, the state's poverty rate and population stability would lead to downward adjustments that are almost exactly offset by the high score on percent urban for the state.

Exhibit V.3 shows actual scores, adjustments, and regression-adjusted scores for the 45 states included in the regression analysis. The number of states with upward and downward adjustments is about equal—22 would see an upward adjustment to their payment while 23 states would experience a downward adjustment. For most states, the adjustments are not large—30 states have an adjustment of less than five points. Five states would have their scores adjusted down by over 10 points—three New England states (New Hampshire, Maine, and Vermont), Iowa, and South Dakota. There are also five states that would have their performance score increased by over 10 points—Texas, Arizona, Louisiana, New Mexico, and the District of Columbia. The adjustment for the District of Columbia is especially large, and would increase measured performance from 26.2 to 48.45.

Given the complexity of the incentive system, the adjustments would not translate into simple percentage increases or decreases in incentive payments for each state. Rather, OCSE would have to use these "adjusted" scores to calculate the incentive payments from scratch—taking into account the overall cap on incentives. Also note that some states, even with adjustments, would fail to receive incentive payments because they fail to reach the minimum performance threshold for a payment—40 percent in this case. Illinois and New Mexico, for instance, have adjusted scores of 32.06 and 39.50, respectively, so would receive zero payments under this scenario. Additionally, states that did not pass the 2000 data reliability audit for this measure will receive

no incentive payment, regardless of their adjusted score. Hawaii falls into this category (not shown).

Exhibit V.3

State Performance on Cases with Orders, FY 2000

STATE	Actual	Adjustment	Adjusted Score
ALABAMA	56.42	2.96	59.38
ALASKA	78.48	–3.67	74.81
ARIZONA	57.37	12.28	69.65
ARKANSAS	67.13	2.77	69.90
COLORADO	78.11	2.78	80.89
CONNECTICUT	64.41	–4.62	59.79
DELAWARE	59.95	–0.51	59.44
DIST. OF COL.	26.20	22.25	48.45
FLORIDA	47.46	9.31	56.77
GEORGIA	55.43	2.44	57.87
HAWAII	47.48	1.72	49.20
IDAHO	77.52	–1.50	76.02
ILLINOIS	30.01	2.05	32.06
IOWA	85.90	–11.56	74.34
KENTUCKY	64.74	–3.30	61.44
LOUISIANA	50.06	12.61	62.67
MAINE	88.64	–13.36	75.28
MARYLAND	61.18	–4.12	57.06
MASSACHUSETTS	67.09	0.23	67.32
MICHIGAN	70.49	–1.82	68.67
MINNESOTA	74.76	–9.26	65.50
MISSISSIPPI	49.16	0.48	49.64
MISSOURI	73.84	–1.63	72.21
MONTANA	83.86	1.84	85.70
NEBRASKA	74.95	–2.39	72.56
NEW HAMPSHIRE	78.40	–13.67	64.73
NEW JERSEY	74.01	–2.82	71.19
NEW MEXICO	26.37	13.13	39.50
NEW YORK	65.53	6.90	72.43
NORTH CAROLINA	56.65	–0.06	56.59
NORTH DAKOTA	75.78	–2.91	72.87
OKLAHOMA	61.91	4.10	66.01
OREGON	66.29	5.81	72.10
RHODE ISLAND	51.00	0.99	51.99
SOUTH CAROLINA	65.66	–2.49	63.17
SOUTH DAKOTA	92.59	–11.04	81.55
TENNESSEE	43.00	1.00	44.00
TEXAS	55.78	11.37	67.15
UTAH	79.56	0.42	79.98
VERMONT	84.94	–12.51	72.43
VIRGINIA	67.85	–4.10	63.75
WASHINGTON	89.35	2.33	91.68
WEST VIRGINIA	61.28	–2.02	59.26
WISCONSIN	76.56	–6.01	70.55
WYOMING	71.01	–4.39	66.62

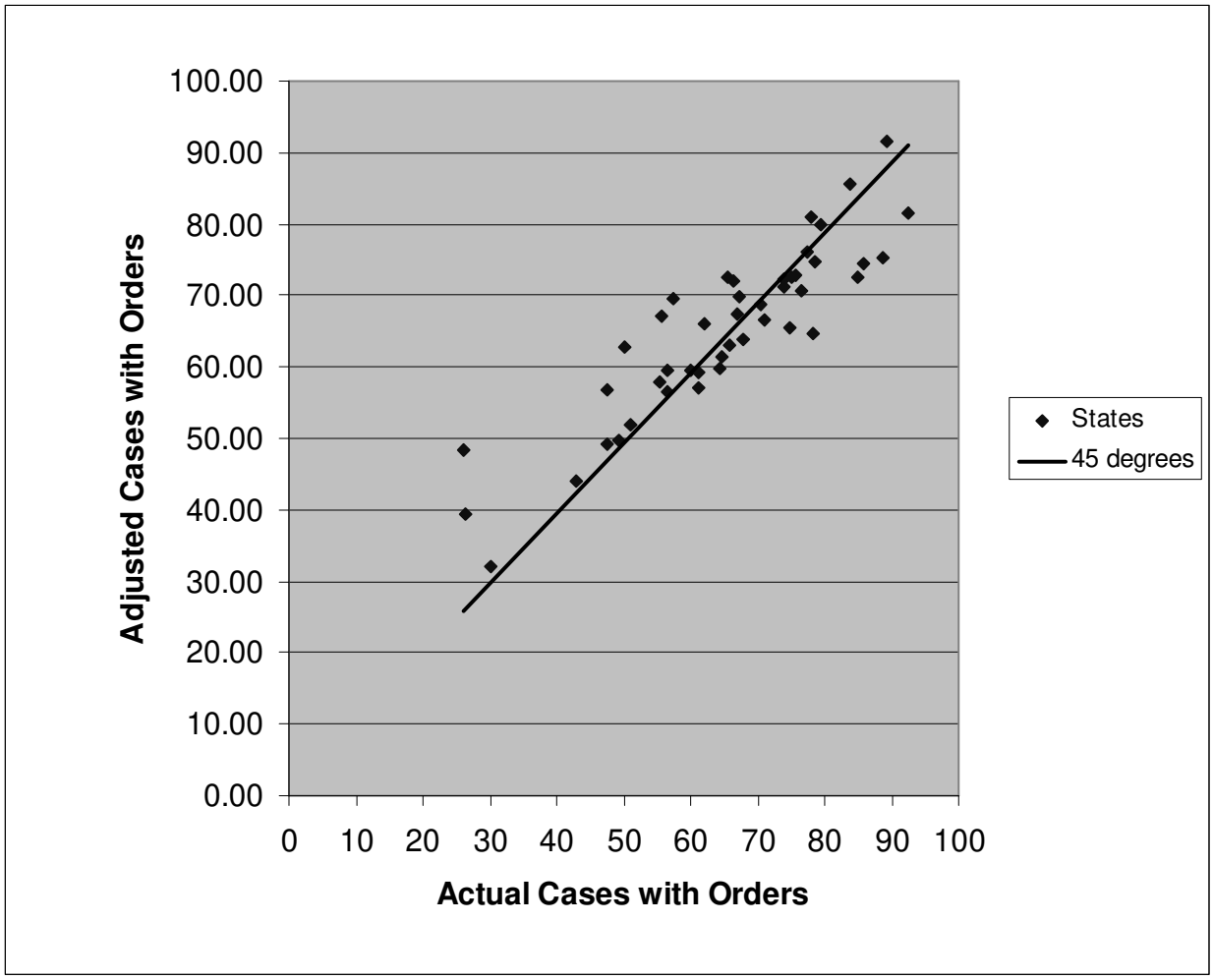
Note: Adjustments made to FY 2000 performance scores.

The scatter diagram in ***Exhibit V.4*** illustrates how the raw and adjusted scores tend to be closely associated—states with low raw scores tend to have low adjusted scores and states with high raw

scores tend to have high adjusted scores. The extent to which state rankings change from the adjustment procedure used here can be measured with the Spearman rank order correlation. If all rankings remain the same after the adjustments, i.e., no state's relative position is changed, then the Spearman correlation will be 1.0; if the adjustments completely reverse the rankings, then the Spearman correlation would be –1.0. (See ***Appendix G*** for the Spearman correlation data.) The Spearman correlation of 0.897 indicates that the relative rankings of the states are mostly the same with and without the adjustments. Thus, an adjustment would not change the order of states. Those that ranked high on the cases with order measure prior to the adjustment do so after it.

Exhibit V.4

Scatter Plot for Cases with Orders



2. Percent of Current Support Paid

We conducted similar analyses for the percent of current support paid. ***Exhibit V.5*** shows how the model could be used to adjust scores for Arizona and Massachusetts. In this model there are five explanatory variables that can be used to adjust measured performance: personal income,

percent of males 20 to 64 who are not employed, percent urban, percent of the TANF caseload under age 30, and population stability. Once again, Arizona is a good example of a state where conditions might warrant an upward adjustment. Personal income in Arizona is below the national average, $24,991 compared to a national average of $28,065. Because the regression model indicates that each dollar of personal income increases collections on child support, Arizona receives an upward adjustment of 1.77 points for its below-average personal income. The proportion of males age 20 to 64 not employed in Arizona is slightly above the national average, and the state receives a small upward adjustment of .53 points for this variable. Arizona's population is highly concentrated in urban areas, and the model indicates that this would lead to lower expected performance. This results in an upward adjustment of 1.96 points. Having a higher proportion of TANF recipients under age 30 leads to lower performance on this measure, and because Arizona's proportion of TANF recipients under age 30 is below the national average, the adjustment for this factor is negative. Finally, Arizona had below-average population stability, which leads to an upward adjustment of 5.34 points. Overall, when Arizona's levels of these five explanatory variables are taken into account, the regression model leads to an adjustment of 8.60 points in Arizona's measured performance for percent of current support paid, from 44.65 to 53.25.

Exhibit V.5

Adjusted Levels of Performance: Current Collections, FY 2000

FY 2000 National Average: 55.20

State: Arizona
FY 2000 Score: 44.65

Econ/Demographic Variable	National Average	State	Difference	Coefficient	Product
Per Capita Pers. Inc.*	28,065.20	24,991.00	3,074.20	0.00	1.77
Men 20-64 not Working*	15.62	16.15	–0.53	–0.99	0.53
TANF Head under 30*	51.94	49.70	2.24	–0.45	–1.00
Pop. Stability 99-00*	83.58	78.70	4.88	1.09	5.34
Percent Urban	51.90	72.48	–20.57	–0.10	1.96
Cases per FTE*	317.84	236.32	81.52	0.00	0.00
% IV-D cases on TANF*	18.50	24.41	–5.91	0.00	0.00
Estimated Adjustment					*8.60*
Actual Score					44.65
Adjusted Score					53.25

State: Massachusetts
FY 2000 Score: 58.72

Econ/Demographic Variable	National Average	State	Difference	Coefficient	Product
Per Capita Pers. Inc.*	28,065.20	37,710.00	–9,644.80	0.00	–5.55
Men 20-64 not Working*	15.62	15.09	0.53	–0.99	–0.53
TANF Head under 30*	51.94	52.30	–0.36	–0.45	0.16
Pop. Stability 99-00*	83.58	86.90	–3.32	1.09	–3.63
Percent Urban	51.90	78.61	–26.71	–0.10	2.54
Cases per FTE*	317.84	303.18	14.66	0.00	0.00
% IV-D cases on TANF*	18.50	23.56	–5.06	0.00	0.00
Estimated Adjustment					*–7.00*
Actual Score					58.72
Adjusted Score					51.72

**Statistically Significant at 10% or better*

Massachusetts, once again, scores high on characteristics that lead to high performance on this measure. The state's scores relative to the national average on personal income, percent of males age 20 to 64 who are not employed, and population stability lead to downward adjustments in measured performance, while the state's scores on percent who live in urban areas and the percent of the TANF caseload under age 30 lead to upward adjustments. The combined effect for all the explanatory variables is for a downward adjustment of 7.00 points, from 58.72 to 51.72.

Exhibit V.6 shows actual scores, adjustments, and regression-adjusted scores for the 45 states included in the regression analysis for the analysis of current support paid. Twenty-one states would experience a downward adjustment, while 24 would receive higher incentive payments. Once again, the majority of states do not have large adjustments—23 of the 45 states analyzed have adjustments less than 5 points. New Hampshire and Connecticut have downward adjustments more than 10 points, and no states have upward adjustments as large as 10 points. Thus, the adjustments for percent of support paid do not include as many large adjustments as for cases with orders.

Again, a number of states would not receive incentive payments, despite the adjustments. Both Illinois and South Carolina had adjusted scores below the 40 percent performance threshold (34.14 percent and 38.72 percent, respectively). Additionally, audits found the data from New York, West Virginia, and Wisconsin to be unreliable for this measure (not shown). Thus, these states would also receive no incentive payments related to their performance on the current collections measure.

Exhibit V.6

State Performance on Collections, FY 2000

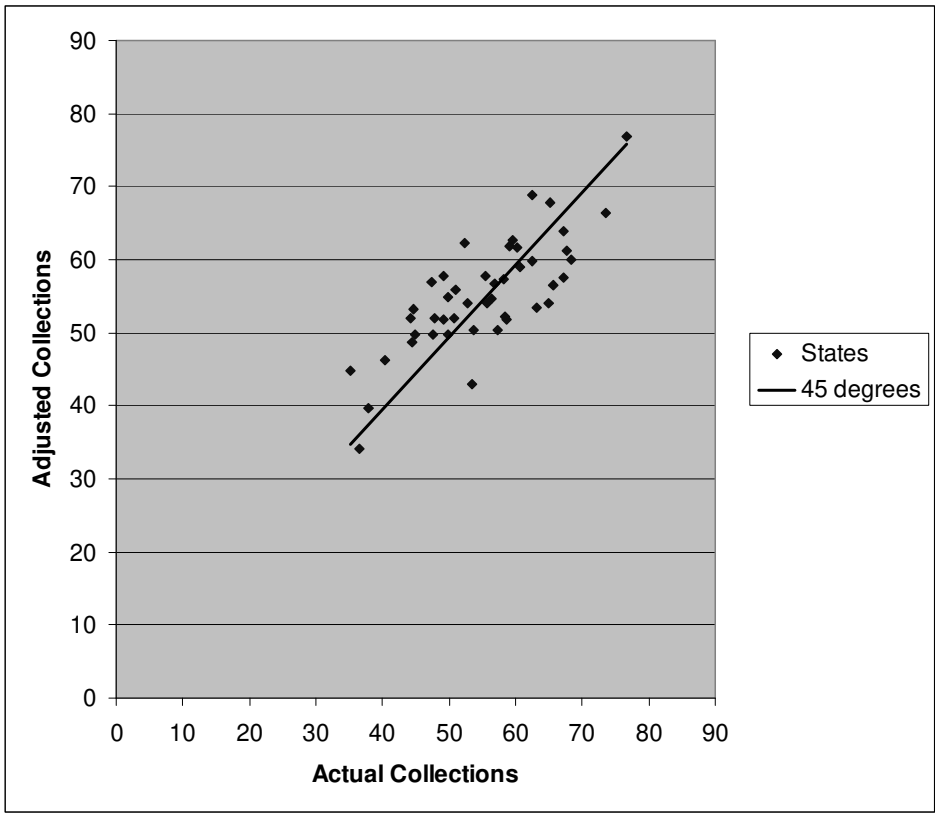
STATE	Actual	Adjustment	Adjusted Score
ALABAMA	35.15	9.63	44.78
ALASKA	49.18	2.62	51.80
ARIZONA	44.65	8.60	53.25
ARKANSAS	47.39	9.59	56.98
COLORADO	50.72	1.36	52.08
CONNECTICUT	53.48	–10.61	42.87
DELAWARE	58.19	–0.84	57.35
DIST. OF COL.	44.35	4.26	48.61
FLORIDA	49.88	5.07	54.95
GEORGIA	47.51	2.23	49.74
HAWAII	49.94	–0.22	49.72
IDAHO	52.68	1.28	53.96
ILLINOIS	36.48	–2.34	34.14
IOWA	62.37	–2.54	59.83
KENTUCKY	50.91	5.02	55.93
LOUISIANA	52.39	9.89	62.28
MAINE	57.30	–7.04	50.26
MARYLAND	58.52	–6.42	52.10
MASSACHUSETTS	58.72	–7.00	51.72
MICHIGAN	67.25	–9.66	57.59
MINNESOTA	68.25	–8.28	59.97
MISSISSIPPI	49.09	8.55	57.64
MISSOURI	47.83	4.24	52.07
MONTANA	56.80	–0.12	56.68
NEBRASKA	60.63	–1.74	58.89
NEW HAMPSHIRE	65.03	–11.07	53.96
NEW JERSEY	63.14	–9.72	53.42
NEW MEXICO	40.36	5.95	46.31
NEW YORK	73.64	–7.18	66.46
NORTH CAROLINA	59.21	2.72	61.93
NORTH DAKOTA	67.13	–3.30	63.83
OKLAHOMA	44.32	7.57	51.89
OREGON	59.65	2.93	62.58
RHODE ISLAND	53.70	–3.35	50.35
SOUTH CAROLINA	37.82	1.90	39.72
SOUTH DAKOTA	67.67	–6.54	61.13
TENNESSEE	44.91	4.79	49.70
TEXAS	65.10	2.68	67.78
UTAH	55.49	2.21	57.70
VERMONT	65.60	–9.19	56.41
VIRGINIA	56.50	–1.92	54.58
WASHINGTON	60.29	1.27	61.56
WEST VIRGINIA	62.44	6.30	68.74
WISCONSIN	76.64	0.13	76.77
WYOMING	55.81	–1.69	54.12

Note: Adjustments Made to FY 2000 performance scores.

The scatter diagram for actual and adjusted scores for percent of current support paid is shown in ***Exhibit V.7***. Again, the points in the diagram indicate that states with low actual scores generally still have low scores after the adjustment is made. The Spearman rank order correlation for percent of current support paid is 0.737, which, while as not as strong a correlation as for cases with orders, is still reasonably high.

Exhibit V.7

Scatter Plot for Collections



3. Percent of Cases Paying Toward Arrears

In this section we present the same material for the percent of cases paying toward arrears performance measure. ***Exhibit V.8*** shows the adjustments for Arizona and Massachusetts. The regression model for estimating percent of cases paying toward arrears has only three explanatory variables beyond the state's control—percentage of the population in poverty, job growth, and percent urban. For this performance measure, the adjustments differ from the two measures we have examined previously. First, the directions of the adjustments are reversed—the adjustment for Arizona is negative and the adjustment for Massachusetts is positive. Second, the adjustments are quite small. In both states the adjustments are less than two percentage points.

Exhibit V.8

Adjusted Levels of Performance: Arrearages, FY 2000

FY 2000 National Average: 59.63

State: Arizona
FY 2000 Score: 50.67

Econ/Demographic Variable	National Average	State	Difference	Coefficient	Product
State Poverty Rate*	11.68	13.53	–1.85	–1.14	2.11
Job Growth 98-99*	1.45	3.70	–2.25	2.93	–6.59
Percent Urban*	51.90	72.48	–20.57	–0.15	3.12
% IV-D cases on TANF	18.50	24.41	–5.91	0.00	0.00
Estimated Adjustment					*–1.35*
Actual Score					50.67
Adjusted Score					49.32

State: Massachusetts
FY 2000 Score: 55.34

Econ/Demographic Variable	National Average	State	Difference	Coefficient	Product
State Poverty Rate*	11.68	10.17	1.5141	–1.14	–1.73
Job Growth 98-99*	1.45	1.70	–0.2467	2.93	–0.72
Percent Urban*	51.90	78.60	–26.6994	–0.15	4.05
% IV-D cases on TANF	18.50	23.56	–5.0556	0.00	0.00
Estimated Adjustment					*1.60*
Actual Score					55.34
Adjusted Score					56.94

**Statistically Significant at 10% or better*

Exhibit V.9 shows actual scores, adjustments, and regression-adjusted scores for the 45 states included in the regression analysis for the analysis of current support paid. Twenty-three states would experience an upward adjustment, while 22 would have a lower payment. The adjustments for this model are generally quite small. Only seven states had adjustments that exceed five points, and only one state, the District of Columbia, has an adjustment greater than 10 points. For the most part, then, the regression model for percent of cases paying toward arrears makes only small adjustments to states' measured performance.

One state, Hawaii, would fail to get an incentive payment even with an adjustment because its score, 36.11 percent, is below the required 40 percent performance threshold for payments. Moreover, Kentucky, West Virginia, and Wisconsin failed their audits on this measure, so would also receive no incentive payment.

Exhibit V.9

State Performance on Arrears, FY 2000

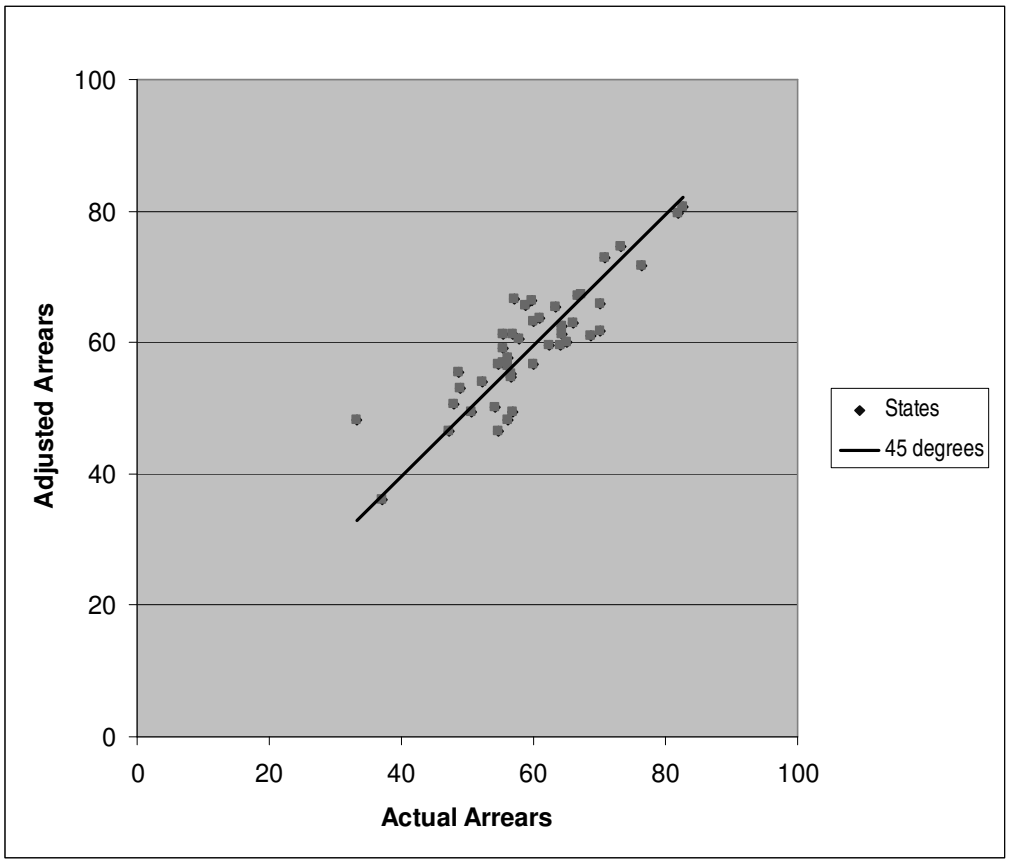
STATE	Actual	Adjustment	Adjusted Score
ALABAMA	48.72	6.71	55.43
ALASKA	65.11	–5.05	60.06
ARIZONA	50.67	–1.35	49.32
ARKANSAS	56.64	–1.33	55.31
COLORADO	62.51	–3.00	59.51
CONNECTICUT	56.13	0.28	56.41
DELAWARE	67.16	0.17	67.33
DIST. OF COL.	33.17	15.12	48.29
FLORIDA	81.81	–2.12	79.69
GEORGIA	73.22	1.48	74.70
HAWAII	37.22	–1.11	36.11
IDAHO	56.12	–7.87	48.25
ILLINOIS	48.86	4.24	53.10
IOWA	54.76	–8.31	46.45
KENTUCKY	82.66	–2.11	80.55
LOUISIANA	57.00	9.58	66.58
MAINE	68.67	–7.74	60.93
MARYLAND	59.88	–3.33	56.55
MASSACHUSETTS	55.34	1.60	56.94
MICHIGAN	60.03	3.05	63.08
MINNESOTA	70.02	–4.18	65.84
MISSISSIPPI	58.90	6.77	65.67
MISSOURI	47.33	–0.73	46.60
MONTANA	66.73	0.26	66.99
NEBRASKA	56.81	4.56	61.37
NEW HAMPSHIRE	64.08	–4.54	59.54
NEW JERSEY	56.16	1.54	57.70
NEW MEXICO	55.47	5.72	61.19
NEW YORK	59.82	6.50	66.32
NORTH CAROLINA	70.73	2.11	72.84
NORTH DAKOTA	57.81	2.69	60.50
OKLAHOMA	52.18	1.83	54.01
OREGON	55.49	3.64	59.13
RHODE ISLAND	61.03	2.77	63.80
SOUTH CAROLINA	56.57	–1.74	54.83
SOUTH DAKOTA	76.31	–4.73	71.58
TENNESSEE	47.88	2.82	50.70
TEXAS	63.44	2.05	65.49
UTAH	64.45	–3.12	61.33
VERMONT	70.24	–8.42	61.82
VIRGINIA	54.22	–4.14	50.08
WASHINGTON	64.34	–1.95	62.39
WEST VIRGINIA	54.66	2.07	56.73
WISCONSIN	65.97	–3.13	62.84
WYOMING	56.88	–7.54	49.34

Note: Adjustments Made to FY 2000 performance scores.

The scatter diagram for actual and adjusted scores for percent of current support paid is shown in ***Exhibit V.10***. Again, the points in the diagram indicate that states with low actual scores generally still have low scores after the adjustment is made. The Spearman rank order correlation for percent of current support paid is 0.848, indicating that for the most part, rankings are retained when the model adjustments are made.

Exhibit V.10

Scatter Plot for Arrears



4. Cost-effectiveness

Exhibit V.11 shows the adjustments for Arizona and Massachusetts. As in the first two outcomes considered, the adjustment is upward for Arizona and downward for Massachusetts. Although the magnitudes of the adjustments appear small compared to the previous scenarios, it should be kept in mind that the cost-effectiveness outcome variable has a much smaller range than the three other outcomes.

Exhibit V.11

Adjusted Levels of Performance: Cost-effectiveness

FY 2000 National
Average: $4.16

State: Arizona
FY 2000 Score: $3.72

Econ/Demographic Variable	National Average	State	Difference	Coefficient	Product
Men 20-64 not Working*	15.62	16.15	–0.53	–0.13	0.07
TANF Head under 30*	51.94	49.70	2.24	–0.10	–0.22
Pop. Stability 99-00*	83.58	78.70	4.88	0.15	0.73
Percent Urban*	51.90	72.48	–20.57	–0.01	0.31
Expenditures per case 99*	317.84	236.32	81.52	0.00	0.00
% IV-D cases on TANF*	18.50	24.41	-5.91	0.00	0.00
Estimated Adjustment					*0.88*
Actual Score					3.72
Adjusted Score					4.60

State: Massachusetts
FY 2000 Score: $3.5

Econ/Demographic Variable	National Average	State	Difference	Coefficient	Product
Men 20-64 not Working*	15.62	15.09	0.53	–0.13	–0.07
TANF Head under 30*	51.94	52.30	–0.36	–0.10	0.04
Pop. Stability 99-00*	83.58	86.90	–3.32	0.15	–0.50
Percent Urban*	51.90	78.61	–26.71	–0.01	0.40
Expenditures per case 99*	317.84	303.18	14.66	0.00	0.00
% IV-D cases on TANF*	18.50	23.56	–5.06	0.00	0.00
Estimated Adjustment					*–0.13*
Actual Score					3.50
Adjusted Score					3.37

**Statistically Significant at 10% or better*

As shown in ***Exhibit V.12***, the cost-effectiveness variable ranges from 1.31 to 6.95. Twenty-four states would receive an upward adjustment on this measure. The adjustments, which range from –1.86 to 1.41, are on a proportionate basis much larger than for the other outcomes considered.

One state, New Mexico, would fail to receive a payment despite the adjustment. The state failed to reach the threshold necessary for a payment ($2.00), and it failed the audit.

Exhibit V.12

State Performance on Cost-effectiveness, FY 2000

STATE	Actual	Adjustment	Adjusted Score
ALABAMA	3.66	1.39	5.05
ALASKA	3.89	0.03	3.92
ARIZONA	3.72	0.88	4.60
ARKANSAS	3.28	1.09	4.37
COLORADO	3.23	0.54	3.77
CONNECTICUT	3.75	–0.34	3.41
DELAWARE	3.19	0.27	3.46
DIST. OF COL.	2.64	1.41	4.05
FLORIDA	3.45	0.59	4.04
GEORGIA	3.72	0.39	4.11
HAWAII	4.54	–0.41	4.13
IDAHO	4.32	–0.08	4.24
ILLINOIS	2.42	–0.06	2.36
IOWA	4.24	–0.29	3.95
KENTUCKY	4.02	0.37	4.39
LOUISIANA	4.92	1.17	6.09
MAINE	4.90	–1.44	3.46
MARYLAND	3.60	–0.57	3.03
MASSACHUSETTS	3.50	–0.13	3.37
MICHIGAN	5.52	–1.86	3.66
MINNESOTA	4.11	–0.81	3.30
MISSISSIPPI	4.92	0.85	5.77
MISSOURI	3.37	0.87	4.24
MONTANA	3.58	–0.56	3.02
NEBRASKA	3.78	–0.12	3.66
NEW HAMPSHIRE	4.82	–1.12	3.70
NEW JERSEY	4.60	–0.68	3.92
NEW MEXICO	1.31	0.22	1.53
NEW YORK	4.90	–0.81	4.09
NORTH CAROLINA	3.86	0.55	4.41
NORTH DAKOTA	4.61	–0.69	3.92
OKLAHOMA	2.83	0.87	3.70
OREGON	5.54	0.12	5.66
RHODE ISLAND	4.44	–0.39	4.05
SOUTH CAROLINA	5.08	–0.09	4.99
SOUTH DAKOTA	6.95	–1.15	5.80
TENNESSEE	4.85	0.66	5.51
TEXAS	4.96	0.39	5.35
UTAH	3.47	0.01	3.48
VERMONT	4.02	–1.50	2.52
VIRGINIA	5.00	0.12	5.12
WASHINGTON	4.53	0.10	4.63
WEST VIRGINIA	4.15	0.16	4.31
WISCONSIN	6.51	0.31	6.82
WYOMING	4.33	–0.26	4.07

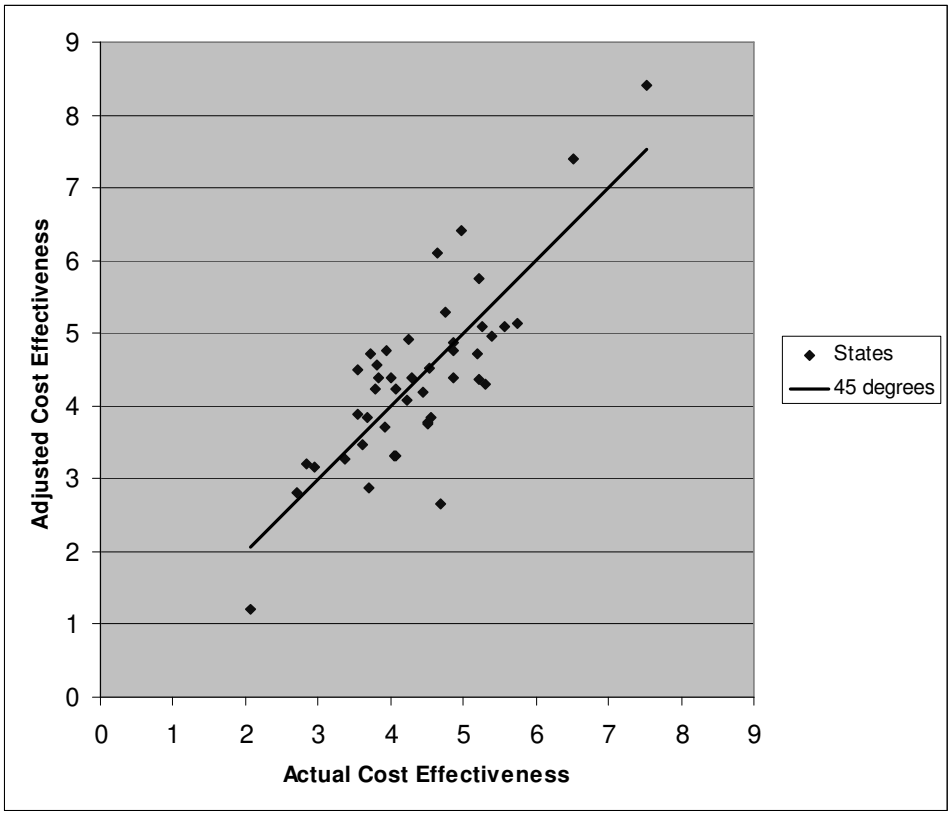
Note: Adjustments made to FY 2000 performance scores.

The scatter diagram for actual and adjusted scores for cost-effectiveness is shown in ***Exhibit V.13***. Again, the points in the diagram indicate that states with low actual scores generally still have low scores after the adjustment is made, but the points are more scattered than for the other outcomes examined. The Spearman rank order correlation for percent of current support paid is

0.561. Although still positive, the lower rank order correlation is indicative of the fact that states are more likely to change rank for the cost-effectiveness variable than for the other outcomes considered.

Exhibit V.13

Scatter Plot for Cost-effectiveness



D. Conclusions

The results reported above show that for four of the five outcome measures used to measure performance of the states for their child support enforcement programs it is feasible to develop regression models to adjust expected performance for exogenous factors. The models we have developed provide, for the most part, modest adjustments to measured performance that take account of factors in the environment that are beyond the state's control. This is the logic that was used to develop a regression-based adjustment system for the Job Training Partnership Act. In that program, state and local governments generally perceived the system to be fair, and the adjustment system was widely accepted.

There are, however, a number of possible concerns that should be addressed before adopting a regression-based adjustment system:

- In some cases, it is important to set standards at absolute levels and not make adjustments to account for differences across states. In setting standards for reading and arithmetic, for

example, many would argue that whatever the background of children in a state, the educational system must bring them up to a specific reading level.

- There are no definitive models of the outcomes used to measure success in the child support enforcement system. Thus, in this and our previous effort in this area, programmatic and research experts suggested a wide range of variables to consider for the models. Many of the variables did not perform well in our statistical models, sometimes having the opposite effect of what was expected, and in other cases the estimated effects were as likely to be due to chance as to be real impacts. Thus, developing good models is as much an art as a science, and care must be taken to develop reasonably accurate models.

- Some variables of interest are not measured very frequently or may not be measured at all. Thus, while good recent measures of income and unemployment are available for all states, measures of job growth and other variables are somewhat dated. The number of poor female-headed households in a state cannot be measured well except in decennial census years. The possibilities of omitted variables and measurement error mean that the models developed may have biased coefficients.

- The relationships among the explanatory variables and the outcomes may change over time. Thus, while adding more years to the analysis generally makes the models more robust, if the relationships change including prior years in the models could lead to bias.

Thus, although it is clear that state demographic and economic factors are related to child support enforcement outcomes and that it is feasible to develop statistical adjustment models for performance, actual implementation of such a system depends both on careful thought about the intent of the performance measurement system and the technical tradeoffs between using statistical adjustment models and using unadjusted measures.

VI. SUMMARY OF MAJOR FINDINGS

A. Summary

This report responds to a Congressional mandate to describe how economic, demographic, and programmatic factors affect the performance of state IV-D programs. We defined state performance through the five measures created in CSPIA that underlie the programs incentive funding program:

- Paternity establishment;
- Cases with orders;
- Current collections;
- Cases paying toward arrears; and
- Cost-effectiveness.

Underlying the analyses were the performance data reported by states in Fiscal Years 1999 and 2000. To isolate the relationships between child support program performance and determinants, we developed a regression model for each performance measure. In addition, we describe how OCSE could use the findings from our analyses to adjust each state's performance score and, in essence, hold states harmless for economic and demographic characteristics that affect performance but over which they have no control.

Through a review of the academic literature and discussions with federal, state, and local program experts, we identified over 50 variables to explain state performance in the five areas. These variables fell into three broad categories: economic, demographic, and programmatic. Economic characteristics, such as personal income per capita and employment rates, gauge the relative ease that non-custodial and custodial parents will encounter in securing and keeping jobs to support their children. Demographic characteristics, including migration rates and urbanicity, indicate populations that IV-D officials have identified as inherently easy or difficult to serve. Finally, programmatic characteristics, like staffing levels or degree of program universality, measured aspects of programs determined in large part by state policy and funding decisions.

Our final models relied on 12 economic, demographic, and programmatic variables, as well as one dummy variable. We employed different combinations of these variables to predict performance for each indicator, and no model used all of them. The stability and ultimate reliability of the models varied across the performance indicators. For example, the model for cases with orders explained more than 73 percent of the variation in the performance scores reported by states. The model consisted of seven independent variables—all but one statistically significant. On the other hand, our model for the statewide paternity establishment indicator explained only 33 percent of the variation in state scores.

While the models do appear to confirm several existing theories about the determinants of child support performance, *the results should be interpreted with caution*. As discussed previously, we conducted the analyses on the first two years of federally audited performance data: fiscal years 1999 and 2000 and consequently, the quality of the performance data is still evolving. In FY 1999, six states failed to provide a reliable audit trail—and therefore failed the audits for all of their indicators—and many other states failed audit tests on individual indicators. While data were somewhat more reliable in FY 2000, federal and state officials see continued room for improvement. In addition to the evolving quality of the performance data, relatively imprecise measures of economic and demographic factors also hinder the analysis. For example, it would be useful to explore the link between employment rates specific to non-custodial parents and program performance. But, in the absence of this ideal measure, we relied on employment rates for all working-age males in a state—regardless of their child support status. In some cases these measures exhibited strong and stable relationships with state child support performance, and in other cases, they did not.

Further study into the economic and demographic determinants of child support performance will be facilitated as states improve their data reporting and as detailed explanatory variables become available over time. OCSE auditors review each state's data submission of performance data annually and pinpoint flaws in its completeness and reliability. As states become more familiar with the audit process, performance data may become more accurate, and studies of this nature would become more reliable. Moreover, a proposed interagency research data warehouse may produce economic and demographic data that are more specific to the IV-D population. The warehouse—which would link new hire, quarterly wage, unemployment insurance, TANF, and Medicaid databases—could ultimately generate employment and demographic information specific to a state's IV-D clients. Such data could prove highly valuable in understanding and predicting performance.

B. Key Findings

Below, we discuss the key findings that emerged from our analyses.

A robust economy is associated with better performance. We ultimately settled on four economic indicators in our final models: poverty rate, personal income per capita, job growth, and the employment rate of working-age males. We included at least one of these indicators in each of our final regression models, and they were statistically significant in most cases. However, no single indicator performed well across all models. Specifically:

- A higher poverty rate was associated with weaker child support program performance on the cases with orders and arrearage measures.

- Per capita personal income did a better job in predicting rates of current collections, with higher personal incomes linked to better performance.

- A higher rate of males ages 24-60 not working depressed performance on current collections and cost-effectiveness.

- A higher rate of job growth was associated with better performance on the arrearage measure.

Demographic factors play a role in state performance. We explored stability of the local population, percent of the population living in urban areas, and the percent of TANF heads under age 30. Consistent with our previous work and related studies in the area, we found:

- A higher share of urban dwellers is associated with weaker performance in each of the models for which it was tested: cases with orders, current collections, cases with collections on arrears, and cost-effectiveness. We speculate the urban variable is serving as a proxy for a host of more specific characteristics that more directly influence child support outcomes (e.g., non-marriage births, crime, and incarceration rates).

- Population stability, a variable not explored in previous research, exhibits strong and stable relationships with the statewide paternity measure, cases with orders, current collections, and cost-effectiveness. We found that the more stable a state's population—as evidenced by the share who remain in the same house from one year to the next—the better is the state performance.

- States with younger TANF case heads exhibited weaker performance for IV-D paternity establishment, current collections, and cost-effectiveness.

Several programmatic factors—determined by state and agency policies—appear to be related to child support enforcement. We explored program universality, cases per full-time equivalent staff, child support expenditures per case, and processes for establishing orders.

- Our findings are consistent with the hypothesis that states that serve a large number of non-TANF clients should report better performance than programs that primarily serve current recipients of cash assistance. Specifically, we find that states with a higher share of IV-D cases receiving TANF exhibit weaker performance on the statewide paternity, case with orders, current collections, arrearages, and cost-effectiveness measures.

- We found that staff resources devoted to enforcement—expressed in terms of cases per FTE are also related to performance. Specifically, the lower is the ratio of cases to total program staff, the better is performance in cases with orders and current collections.

- Another measure of resources—average IV-D expenditure per case—is related to better performance for on the statewide paternity measure but weakens the cost-effectiveness ratio.

- The process by which states establish child support orders appears related to their performance on case with orders. Specifically, having an administrative process is associated with better performance in order establishment.

States will face tradeoffs in attempting to maximize overall performance. Officials will likely discover an inherent tradeoff between cost-effectiveness and the other performance measures. For example, if states increased staffing levels in an attempt to boost case

establishment or current collection rates, they would likely increase spending per case, which could decrease their cost-effectiveness ratios.

Adjustments to state performance scores would be feasible at this time for four of the five of the indicators. Using the findings from the models, OCSE could adjust state performance for all but the paternity establishment measure so as to hold states harmless for economic and demographic factors that appear associated with child support performance but over which program directors have no control. For example, states with characteristics that are linked with weaker child support enforcement performance (e.g., higher-than-average state poverty rates, lower-than average per capita personal incomes, and high levels of in- or out-migration) would see upward adjustments, while states with strong economies and stable populations would receive downward adjustments. The Department of Labor employed a similar type of adjustment process in its allocation of funds under the Job Training Partnership Act program. Advantages and disadvantages would be inherent in an adjustment process.

- Advantages include an increased perception of equity in the incentive funding system, particularly among states that perceive themselves as penalized by factors beyond their control (e.g., weak economies).

- Disadvantages would stem from mistrust of the regression models, and their underlying data, employed to make the adjustments. Moreover, the process for determining state incentive payments is already long and complex. Adjusting state scores based on economic and demographic factors would lengthen the time of the process, thus delaying the payment of incentives. This is due to the interactive nature of the incentive system. A capped incentive pool means that an upward adjustment to one state would have to be matched by a same-size downward adjustment in other states.

Further research will be necessary. This study is based on two years of data. The original modeling used FY 1999 data. We re-ran the regressions using FY 2000 data and found that most, but not all, of the relationships remained stable. By combining FY 1999 and 2000 data, we increased the sample size. This resulted in our strongest results. Further studies should aim to replicate our findings. By using individual-year data, researchers can explore whether the variables we identified as significant factors in child support performance remain stable over time. Combining the data for additional years would increase the sample size further. At some point, it may be possible to model adjustments for the paternity establishment measures.

Study of State Demographic, Economic, and Programmatic Variables and Their Impact on the Performance-Based Child Support Incentive System

Final Report

Appendices

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Appendix A
Expert Contributors

Exhibit A.1

List of Expert Contributors

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Appendix B
Independent Variable Selection

Exhibit B.1

Candidate Roster of Explanatory Variables

Variable	Hypothesized Effect on CSE Performance				
	Paternity Establish.	Order Establish.	Collection Current	Collection Cost Effective.	Cost Effective.
INCOME AND POVERTY MEASURES					
Poverty and Welfare Measures					
% of population in poverty	-	-	-	-	-
% children in poverty	-	-	-	-	-
% children in state receiving TANF	?	?	-	-	-
Infant mortality rate per 1,000 births	?	?	?	?	?
Earnings and Income Measures					
Per capita income	+	+	+	+	+
% AGI in lowest income quintile	-	-	-	-	-
Median earnings—males	+	+	+	+	+
Median earnings—females	-	-	-	-	-
Employment Status					
Unemployment rate for population	-	-	-	-	-
% males 20 to 45 not working	-	-	-	-	-
% males 20 to 64 not working	-	-	-	-	-
% workers in high turnover industries	-	-	-	-	-
% workers self-employed	-	-	-	-	-
Level of unionization	+	+	+	+	+
Job growth	+	+	+	+	+
POPULATION CHARACTERISTICS					
Fertility measures					

- Hypothesized negative association
+ Hypothesized positive association
? No hypothesized association

Variable	Hypothesized Effect on CSE Performance				
	Paternity Establish.	Order Establish.	Collection Current	Cost Effective.	
Non-marital birth rates per women 15 to 44	-	-	-	-	-
% births to unmarried women—stock and flow	-	-	-	-	-
% births to teens—stock and flow	-	-	-	-	-
Race/Ethnicity					
% population that is Native American	?	?	?	?	?
% population African-American	?	?	?	?	?
% population that is Hispanic	?	?	?	?	?
% of TANF/AFDC/FS Caseload African-American	?	?	?	?	?
% of TANF/AFDC/FS Caseload that is Hispanic	?	?	?	?	?
Other Demographic Characteristics					
% population under age 19	?	?	?	?	?
Population stability (same house after 1 year)	+	+	+	+	+
% TANF/AFDC/FS households under age 30	-	-	-	-	-
Average household size	-	-	-	-	-
Average size of households receiving TANF/AFDC/FS	-	-	-	-	-
% households headed by female	-	-	-	-	-
% population living in urban areas	-	-	-	-	-
% pop.> 25 with less than HS degree	-	-	-	-	-
Incarceration rate	-	-	-	-	-

- Hypothesized negative association
+ Hypothesized positive association
? No hypothesized association

Variable	Hypothesized Effect on CSE Performance				
	Paternity Establish.	Order Establish.	Collection Current	Collection	Cost Effective.
PROGRAMMATIC VARIABLES					
Staffing and Expenditures					
Total expenditures per case	+	+	+	+	-
Expenditure per case, past five years	+	+	+	+	-
Ratio IV-D expenditures to state personal income	+	+	+	+	-
Cases per FTE	+	+	+	+	-
# IV-D directors in past five years	?	?	?	?	?
% staff that are public employees vs. contractors	?	?	?	?	?
System automation	?	?	?	?	?
Structure and Organization					
Judicial vs. administrative process	?	?	?	?	?
Locally elected officials can influence policy	?	?	?	?	?
State vs. county-based system	?	?	?	?	?
% funding administered at county level	?	?	?	?	?
Location of CSE (e.g., Department of Social Services)	?	?	?	?	?
CSE Caseload and Enforcement Characteristics					
Proportion of IV-D caseload that is interstate	-	-	-	-	-
Proportion of IV-D caseload on TANF	?	?	-	-	-
% cases ever TANF/AFDC	?	?	-	-	-
Orders must be paid through the IV-D system	?	?	+	+	+
TANF break-even levels by state	+	+	+	+	+
TANF grant as a percent of the poverty line	+	+	+	+	+

- Hypothesized negative association
+ Hypothesized positive association
? No hypothesized association

Variable	Hypothesized Effect on CSE Performance					
	Paternity Establish.	Order Establish.	Collection Current	Collection	Cost Effective.
Level of order/guidelines structure	?	?	-	-	+
% collections through wage withholding	?	?	+	+	+
% collections through tax intercepts	?	?	+	+	+
Use of new hire directory	+	+	+	+	+
% licenses suspended	?	?	?	?	?

- Hypothesized negative association
+ Hypothesized positive association
? No hypothesized association

Exhibit B.2

Variables Not Included in Study

Variable	Reason for non-inclusion
State tax collections per capita	No hypothesized relationship with CSE
State tax collections per $1,000 income	No hypothesized relationship with CSE
Unemployment rate of non-custodial parents	Data unavailable at state level
Percent men and women earning less than "X"	Data unavailable at state level
% IV-D families in poverty	Data unavailable
State industries/occupations	No hypothesized relationship with CSE
Proportion population non-English speaking	No hypothesized association with CSE
State proximity to Mexican border	No hypothesized association with CSE
Percent population immigrants	No hypothesized association with CSE
Proportion single parents divorced versus never married	Data unavailable at state level
Percent non-custodial parents who are re-married	Data unavailable at state level
Percent NCP with joint custody or visitation rights	Data unavailable at state level
Non-marital custodial parents as % of the IV-D caseload	Data unavailable
Education levels of non-custodial parents	Data unavailable at state level
High school dropout rate	Data unreliable at state level
Religiosity	Data unavailable
Computer vendor by state	No hypothesized association with CSE
Tenure of IV-D director	Data unavailable
Staff placement (% in customer service, admin, etc.)	Data unavailable at state level

Appendix C

State-level Data

State-level Data

	3-Year State Poverty Rate		Per Capita Personal Income		Men Age 20-64 Not Employed		Job Growth	
	1999	2000	1999	2000	1999	2000	1999	2000
ALABAMA	14.70	14.67	22,123	23,460	18.94	19.39	2.1	0
ALASKA	8.80	8.40	27,904	29,597	16.95	18.78	2.0	1.3
ARIZONA	18.10	13.53	24,133	24,991	14.68	16.15	3.8	3.7
ARKANSAS	17.20	15.73	21,260	21,945	19.52	19.07	2.0	2.1
CALIFORNIA	16.30	14.00	28,280	32,225	16.69	16.07	3.2	3.1
COLORADO	9.30	8.53	29,860	32,441	11.90	12.84	2.4	2.3
CONNECTICUT	9.90	7.73	37,452	40,870	14.34	12.59	1.2	1.0
DELAWARE	9.50	9.93	29,571	31,074	14.90	14.88	2.0	1.6
DIST. OF COL.	22.70	17.37	37,714	38,374	20.13	20.53	1.7	1.0
FLORIDA	13.90	12.03	26,930	27,836	16.23	16.17	4.3	3.7
GEORGIA	14.30	12.53	26,134	27,790	14.64	15.13	4.5	1.2
HAWAII	12.30	10.57	26,725	27,819	18.47	17.68	1.5	2.2
IDAHO	13.20	13.27	21,923	23,640	14.05	14.01	2.6	3.5
ILLINOIS	11.10	10.50	29,974	31,842	14.32	15.08	1.0	0.7
INDIANA	8.60	8.27	25,182	26,838	13.28	14.54	2.2	0.1
IOWA	9.40	7.93	24,844	26,376	11.71	12.18	3.6	1.9
KANSAS	10.10	10.47	25,687	27,408	12.31	15.04	2.5	1.9
KENTUCKY	15.50	12.50	22,353	24,057	20.17	20.59	2.3	1.6
LOUISIANA	18.60	18.53	22,352	23,041	19.25	20.31	1.8	0.9
MAINE	10.60	9.80	23,529	25,399	17.43	16.27	3.3	1.8
MARYLAND	8.60	7.37	30,850	33,621	15.18	13.81	3.1	2.1
MASSACHUSETTS	10.30	10.17	33,394	37,710	14.97	15.09	0.7	1.7
MICHIGAN	10.80	10.23	26,807	29,071	15.01	14.73	0.7	0.4

MINNESOTA	9.90	7.83	29,503	31,913	11.48	12.63	2.6	1.5
MISSISSIPPI	18.30	15.53	20,013	20,856	20.60	19.64	0.9	-0.8
MISSOURI	10.40	9.80	25,403	27,186	14.67	13.52	0.4	1.1
MONTANA	16.40	15.97	21,324	22,541	16.48	15.97	2.9	1.7
NEBRASKA	10.80	10.73	25,861	27,658	10.33	11.21	0.2	-0.9
NEVADA	9.90	10.13	29,806	29,551	15.14	14.36	4.3	4.9
NEW HAMPSHIRE	8.40	7.57	29,679	33,042	10.84	10.80	5.5	0.3
NEW JERSEY	9.00	8.13	34,310	37,112	15.48	14.03	1.7	1.3
NEW MEXICO	22.40	19.30	21,178	21,883	20.13	18.52	1.9	2.0
NEW YORK	16.60	14.73	32,236	34,502	19.86	19.68	2.9	1.8
NORTH CAROLINA	12.50	13.20	25,454	26,842	14.52	15.28	1.8	0.6
NORTH DAKOTA	13.20	12.73	22,767	24,780	11.11	12.35	0.8	-0.1
OHIO	11.60	11.07	26,164	27,914	16.16	16.19	1.1	0.5
OKLAHOMA	14.80	14.07	22,199	23,582	16.65	17.01	3.0	1.3
OREGON	12.80	12.93	25,958	27,649	16.75	16.34	0.8	0.6
PENNSYLVANIA	11.30	9.87	27,358	29,533	17.02	16.78	0.8	0.3
RHODE ISLAND	11.80	10.20	28,012	29,158	15.69	14.61	2.3	1.5
SOUTH CAROLINA	13.30	12.00	22,544	23,952	17.57	16.98	1.9	1.6
SOUTH DAKOTA	13.00	9.37	23,797	25,993	11.39	11.76	1.8	0.7
TENNESSEE	14.50	13.33	24,576	25,878	17.25	18.22	1.4	0.8
TEXAS	16.10	14.93	25,803	27,722	13.89	13.95	3.6	2.8
UTAH	8.50	8.10	22,294	23,364	10.45	10.62	2.8	2.4
VERMONT	10.60	10.30	24,803	26,904	12.36	12.66	3.3	1.9
VIRGINIA	11.30	8.13	28,343	31,065	12.94	12.82	1.7	2.0
WASHINGTON	10.00	9.50	28,632	31,129	15.65	17.10	2.0	2.0
WEST VIRGINIA	17.60	15.83	20,246	21,767	25.30	26.23	0.0	0.8
WISCONSIN	8.60	9.00	26,245	28,066	12.69	13.53	1.0	1.4
WYOMING	12.00	11.07	24,927	27,436	14.39	12.06	2.1	2.4

State-level Data (continued)

	Percent Urban		TANF Heads Under Age 30		Cases per FTE		Judicial / Administrative	
	1999	2000	1999	2000	1999	2000	1999	2000
ALABAMA	45.54	45.54	63.8	63.8	426.11	437.93	16	16
ALASKA	40.31	40.31	41.3	41.3	197.49	183.63	5	5
ARIZONA	72.48	72.48	49.7	49.7	261.44	236.32	16	16
ARKANSAS	25.17	25.17	60.2	60.2	211.41	236.19	9	9
CALIFORNIA	85.57	85.57	34.5	34.5	238.00	227.04	14	14
COLORADO	72.18	72.18	51.0	51.0	241.55	202.03	9	9
CONNECTICUT	74.70	74.70	53.2	53.2	366.86	341.91	13	13
DELAWARE	68.98	68.98	54.9	54.9	288.26	283.02	13	13
DIST. OF COL.	100.00	100.00	50.7	50.7	556.61	609.00	16	16
FLORIDA	78.69	78.69	48.5	48.5	218.94	231.83	14	14
GEORGIA	50.32	50.32	54.6	54.6	485.27	503.61	16	16
HAWAII	67.41	67.41	42.3	42.3	364.86	405.59	12	12
IDAHO	27.66	27.66	55.2	55.2	348.69	381.26	16	16
ILLINOIS	74.18	74.18	50.0	50.0	544.24	546.37	15	15
INDIANA	48.54	48.54	55.6	55.6	576.86	551.25	16	16
IOWA	33.94	33.94	57.3	57.3	281.49	281.42	11	11
KANSAS	41.11	41.11	60.3	60.3	269.24	285.67	14	14
KENTUCKY	34.65	34.65	53.4	53.4	288.47	284.01	16	16
LOUISIANA	52.80	52.80	57.8	57.8	372.52	334.82	15	15
MAINE	21.71	21.71	46.6	46.6	212.27	217.36	5	5
MARYLAND	74.90	74.90	47.3	47.3	287.89	312.33	10	10
MASSACHUSETTS	78.61	78.61	52.3	52.3	240.22	303.18	16	16
MICHIGAN	62.52	62.52	35.5	35.5	363.32	383.05	14	14

MINNESOTA	54.18	54.18	51.9	51.9	169.82	158.27	14	14
MISSISSIPPI	24.01	24.01	60.1	60.1	417.08	492.31	14	14
MISSOURI	54.38	54.38	60.8	60.8	284.49	284.48	6	6
MONTANA	26.12	26.12	50.3	50.3	186.00	206.41	4	4
NEBRASKA	43.58	43.58	55.7	55.7	254.30	252.37	15	15
NEVADA	75.79	75.79	54.4	54.4	278.27	316.19	14	14
NEW HAMPSHIRE	30.63	30.63	52.5	52.5	228.67	227.57	12	12
NEW JERSEY	85.77	85.77	48.7	48.7	173.94	168.43	12	12
NEW MEXICO	42.86	42.86	49.9	49.9	346.34	340.81	14	14
NEW YORK	78.47	78.47	42.5	42.5	338.13	326.43	14	14
NORTH CAROLINA	37.88	37.88	59.5	59.5	303.94	314.32	11	11
NORTH DAKOTA	31.70	31.70	52.9	52.9	264.84	237.95	16	16
OHIO	61.36	61.36	58.4	58.4	185.49	225.90	6	6
OKLAHOMA	43.06	43.06	57.3	57.3	251.49	227.60	11	11
OREGON	49.96	49.96	45.8	45.8	306.17	324.05	6	6
PENNSYLVANIA	60.68	60.68	50.0	50.0	376.26	236.82	12	12
RHODE ISLAND	82.17	82.17	50.0	50.0	467.18	428.33	12	12
SOUTH CAROLINA	40.88	40.88	52.0	52.0	797.72	645.76	10	10
SOUTH DAKOTA	23.56	23.56	50.5	50.5	323.89	314.74	9	9
TENNESSEE	45.46	45.46	57.2	57.2	631.15	573.39	16	16
TEXAS	66.96	66.96	52.4	52.4	497.45	415.46	14	14
UTAH	76.61	76.61	52.3	52.3	152.21	145.36	8	8
VERMONT	15.44	15.44	49.4	49.4	193.75	201.95	12	12
VIRGINIA	61.89	61.89	54.9	54.9	374.55	368.97	5	5
WASHINGTON	66.04	66.04	43.4	43.4	183.24	186.29	9	9
WEST VIRGINIA	21.67	21.67	49.2	49.2	248.49	248.87	12	12
WISCONSIN	50.39	50.39	59.2	59.2	328.72	339.39	15	15
WYOMING	25.13	25.13	53.4	53.4	170.73	158.49	14	14

State-level Data (continued)

	Currently on TANF		Universality		Population Stability		Expenditures per Case	
	1999	2000	1999	2000	1999	2000	1999	2000
ALABAMA	11.61	11.03	37.42	37.97	84.9	84.9	167.94	187.04
ALASKA	20.54	17.11	35.81	29.52	77.9	77.9	371.33	457.47
ARIZONA	23.50	24.41	19.37	19.90	78.7	78.7	221.58	245.96
ARKANSAS	14.02	15.35	49.97	50.81	82.2	82.2	296.45	269.40
CALIFORNIA	34.92	28.91	17.42	17.32	83.4	83.4	273.44	333.18
COLORADO	14.32	11.77	20.31	22.58	78.9	78.9	302.25	433.51
CONNECTICUT	20.58	19.68	20.34	22.29	86.3	86.3	249.57	297.69
DELAWARE	17.37	16.62	48.05	49.39	84.8	84.8	288.75	332.46
DIST. OF COL.	30.80	30.55	30.86	31.98	82.4	82.4	131.58	125.15
FLORIDA	8.16	12.95	25.43	28.09	80.5	80.5	245.52	275.82
GEORGIA	20.48	18.54	34.44	34.39	82.2	82.2	137.85	158.65
HAWAII	33.75	31.68	32.58	31.04	83.2	83.2	278.20	179.36
IDAHO	5.22	5.09	48.44	51.67	82.5	82.5	206.92	272.08
ILLINOIS	27.87	17.04	44.76	38.34	84.4	84.4	134.13	148.46
INDIANA	8.20	10.40	68.22	66.22	83.8	83.8	97.67	106.30
IOWA	19.11	16.81	22.11	23.74	84.3	84.3	249.22	330.22
KANSAS	14.48	14.75	45.64	45.83	83	83	315.65	337.65
KENTUCKY	20.26	19.91	58.26	58.53	84.7	84.7	188.04	196.30
LOUISIANA	18.20	14.95	29.12	29.88	83.9	83.9	148.61	159.46
MAINE	23.63	20.84	22.52	22.17	87.2	87.2	299.56	323.37
MARYLAND	15.13	14.66	54.44	53.85	85	85	247.14	317.33
MASSACHUSETTS	26.41	23.56	20.27	20.79	86.9	86.9	306.33	404.80
MICHIGAN	14.48	12.64	39.68	40.37	85.3	85.3	172.10	243.72

MINNESOTA	28.01	25.70	30.22	18.61	86.6	86.6	485.43	525.76
MISSISSIPPI	11.25	10.52	50.63	52.46	84.1	84.1	123.15	117.93
MISSOURI	21.51	21.40	44.72	43.10	82.1	82.1	264.31	286.62
MONTANA	14.36	15.73	26.00	23.72	84	84	261.55	353.59
NEBRASKA	15.95	12.77	44.82	42.73	82.2	82.2	306.83	396.51
NEVADA	29.84	10.19	48.79	63.78	76.3	76.3	241.33	392.24
NEW HAMPSHIRE	18.52	17.53	37.93	37.94	85.1	85.1	341.77	399.60
NEW JERSEY	23.87	21.07	32.11	33.46	87.9	87.9	370.41	431.64
NEW MEXICO	39.77	34.61	24.30	22.25	82.4	82.4	310.40	314.37
NEW YORK	33.90	29.90	20.45	22.02	88.9	88.9	200.61	242.98
NORTH CAROLINA	15.56	13.75	32.41	31.89	83.3	83.3	235.45	221.30
NORTH DAKOTA	14.70	13.61	40.00	41.30	84	84	236.67	265.99
OHIO	22.89	13.18	67.41	59.42	85.6	85.6	301.52	393.75
OKLAHOMA	19.21	17.19	28.22	30.25	81.7	81.7	200.30	297.66
OREGON	16.40	15.72	35.54	38.10	79.1	79.1	184.65	205.87
PENNSYLVANIA	17.04	17.26	42.49	41.80	88.4	88.4	254.60	319.38
RHODE ISLAND	44.83	36.44	15.03	15.05	87	87	163.83	187.15
SOUTH CAROLINA	16.07	17.24	28.64	29.68	84.3	84.3	134.94	174.36
SOUTH DAKOTA	12.42	12.05	28.39	28.80	84.1	84.1	198.45	232.54
TENNESSEE	25.18	28.23	33.63	30.59	84.3	84.3	114.43	127.99
TEXAS	17.44	17.90	34.80	40.07	81.3	81.3	155.87	195.99
UTAH	19.84	19.21	26.33	25.34	81.8	81.8	398.62	459.81
VERMONT	39.87	37.79	15.65	17.87	85.7	85.7	378.75	415.20
VIRGINIA	15.40	13.79	45.79	45.87	83.3	83.3	181.24	202.72
WASHINGTON	18.36	16.50	26.45	27.34	79.9	79.9	393.51	402.38
WEST VIRGINIA	15.08	13.43	64.94	37.41	87	87	209.99	243.15
WISCONSIN	8.15	7.07	24.12	29.37	84.4	84.4	234.70	255.59
WYOMING	8.94	8.19	63.10	39.63	80.5	80.5	190.99	240.22

Appendix D

Child Support Order Establishment Taxonomy

The taxonomy provides a broad, macro view of the child support order establishment processes. We did not collect detailed information on order establishment, but instead construct a method to categorize states. Some factors we explored in classifying state processes were:

- *Ministerial functions*: To what extent does the IV-D office establish support orders without a hearing?
- *Forum*: Where is the order established? Is it the judicial or executive branch? Does the forum differ if the order is contested?
- *Presiding officer*: If the order is contested, is the presiding officer is a judge, a non-judge, or an executive agency hearings officer?
- *Attorney involvement*: does an attorney represent the IV-D office in the order establishment process?

We used responses to the 1997 Center for Law and Social Policy (CLASP) survey of state IV-D directors to lay the foundation for our state classification exercise. The CLASP survey asked IV-D directors or their designated staff about the key "players" in their child support programs. Two questions specifically asked about the agencies that are involved in establishing support obligations in uncontested and contested cases. For purposes of this study, an uncontested case is one in which the parties generally follow the standard establishment process and do not appeal the state's decision to a review agency or governing body. In a contested case, one or both of the parties disagrees with a preliminary outcome in the establishment process and requests a review of the guidelines finding.

Many states checked multiple players, indicating that many employ a mix of judicial and administrative elements. To clarify state processes, we incorporated information from other sources. Specifically, we consulted the following studies:

- The National Child Support Enforcement Association (NCSEA) Interstate Roster and Referral Guide,[29] which provided profiles on each state's regulations and procedures on support order establishment;
- West Virginia Bureau for Child Support Enforcement study of state administrative processes,[30] which included profiles of Colorado, Maine, Missouri, Montana, Oregon, South Carolina, and Virginia;
- Canada Department of Justice study[31] of expedited child support, which included profiles of Alaska, California, Colorado, Connecticut, Maine, Montana, Oregon, Texas, and Washington; and,

[29] National Child Support Enforcement Association (1999). *Interstate Roster and Referral Guide*. Washington, D.C.: NCSEA.
[30] 1997 unpublished document.

- Policy Studies, Inc.,[32] report on Minnesota's administrative process.

After completing a draft of the taxonomy, we shared it with the state IV-D directors to solicit feedback. A response form asked whether we classified their states correctly and if there were any elements missing from the taxonomy.

Using these various sources, we developed a continuum of state policies, ranging from highly judicial to highly administrative. We assigned state processes into one of seven categories. Each is described below.

Judicial forum, judge presides. This is the most judicial process. The tribunal is in the court. A judge hears cases and sets the orders.

Judicial forum, non-judge presides. States in this category have tribunals in the judiciary—either the court or an administrative office of the court. The presiding officer, however, is not a judge, but an appointed magistrate, master of the court, or another type of hearing officer, such as an administrative law judge. This judicial officer holds hearings and sets orders.

Administrative forum, office of administrative hearings or attorney general. States in this category have tribunals in the executive branch of government, although not in the same agency that houses the child support division. The presiding officer could be an administrative law judge or another type of hearings officer.

Administrative forum, IV-D umbrella agency. In this category, the tribunal is located within an agency that houses the IV-D unit (e.g., Department of Social Services, Department of Revenue), but not within the IV-D agency itself. The presiding officer is generally not an administrative law judge, but some other type of hearings officer.

Administrative forum, IV-D agency. Some states use IV-D staff to convene hearings and set orders. Like the previous category, the hearings officer is generally not a formal administrative law judge. Often child support workers conduct hearings.

Administrative forum, consent order. Some states make significant use of consent orders—the IV-D agency creates an order using guidelines and the non-custodial parent signs the consent if he/she accepts. In some states, the consent order is finalized by a IV-D administrative hearing officer, while in others it goes to the court for sign-off, and only becomes official when signed by a judge. We classify a state in this category if the majority of orders are set by the consent process, regardless of whether the order requires IV-D hearings officer or judicial sign-off.

Administrative forum, no hearing. States using this most administrative forum create orders administratively without any hearing. IV-D staff set orders.

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[31] Canada Department of Justice (2000). *Expedited Child Support: An Overview of the Commonwealth Countries' and United States' Procedures for Establishing and Modifying Child Support.* On-line: http://www.canada.justice.gc.ca/en/ps/sup/cspo/expedited2.html

[32] Williams, V. (1993). *A Comparative Analysis of Minnesota's Administrative Process*. Denver: Policy Studies, Inc.

Attorney involvement in process. In addition to these seven categories, we examined whether the IV-D office is represented in the proceedings by an attorney (e.g., district attorney or attorney general). Our theory is that states that use attorneys extensively have more formal, judicial-like processes.

Uncontested and contested orders. While reviewing documents on order establishment processes, it became clear that states often use different forums depending upon whether the order is uncontested or contested. In many instances, a state would have an administrative process for uncontested cases and a more judicial process for contested ones. Thus, each state was assigned two marks, indicating its categorization for each type of order.

In scoring the taxonomy, we assigned a "7" to most highly judicial forum, and a "1" to the most administrative one. The "scores" are simply an accounting method. We do not mean to imply that a high score or a low score is better. Rather we are seeking a way to group states that appear to have similar processes together. In addition to scoring both types of orders, we assign a point if an attorney represented the IV-D agency in an uncontested order and a point if the agency is represented in a contested one. For example:

- A state that uses a judge to set both uncontested and contested orders received a score of 14. If attorneys represent the IV-D agency for both types of orders, the score was 16.

- A state that set initial orders without a hearing, used IV-D staff to hear contested orders, and did not utilize attorneys received a score of 4.

- A state that used a consent process for uncontested orders would get a score of 2. If judges in the courts heard contested orders, the score would be 7. If attorneys represented the state agency in contested cases only, the state received an extra point. This state's total score would be 10.

Although the majority of states were easily placed into one of the seven general categories, a few presented problems. For instance, some states had multiple levels of hearings (e.g., the first hearing occurs within the IV-D agency and the subsequent hearing within the larger department). In these instances, we based scoring on the entity that had the ultimate decision (in the example above, it would be the larger agency). There were also states that had different processes for different counties. For instance, judges hear cases in some counties while non-judges (e.g., magistrates) hear cases in others. For these states, we classified the process according to the counties where the bulk of the IV-D caseloads resided. Still other states had both administrative and judicial processes operating side by side. We classified the state according to which process was used to establish the majority of orders.

As ***Exhibit D.1*** indicates, taxonomy scores range from 16 to 4. We defined any state that has a score of 14 or above as "highly judicial." States with these scores generally establish all orders in a judicial forum and use IV-D attorneys for both uncontested and contested cases. States that score under 10 are classified as "highly administrative." These states generally set uncontested orders without a hearing, through a consent process, or through hearings within the IV-D agency. Contested cases are heard in an administrative forum. Attorney involvement is uncommon. States in the 10 to 14 range are classified as "quasi-judicial" because they employ a mix of

administrative forums for uncontested orders and judicial forums for contested ones. Some also use attorneys for both types of processes.

	Judicial Forum		Administrative Forum						
	Judge Presides (7)	Non-Judge Presides (6)	OAH or AG (5)	Non-IVD Hearing Officer (4)	IVD Conducts In-House Hearings (3)	Consent Order (2)	IVD Sets Order without Hearing (1)	Attorney Represents IVD Agency (1,1)	Score
Alabama	U, C							U, C	16
Alaska				C			U		5
Arizona	U, C							U, C	16
Arkansas	C					U			9
California		U, C						U, C	14
Colorado		C				U		C	9
Connecticut		U, C						C	13
Delaware		U, C						C	13
District of Columbia	U, C							U, C	16
Florida		U, C						U, C	14
Georgia	U, C							U, C	16
Hawaii			U, C					U, C	12
Idaho	U, C							U, C	16
Illinois	C	U						U, C	15

Indiana	U, C							U, C	16
Iowa	C					U		U, C	11
Kansas		C				U		U,C	10
Kentucky	U, C							U, C	16
Louisiana	C	U						U, C	15
Maine				C			U		5
Maryland		C				U		U, C	10
Massachusetts	U, C							U, C	16
Michigan		U, C						U, C	14
Minnesota		U, C						U, C	14

	Judicial Forum		Administrative Forum						
	Judge Presides (7)	Non-Judge Presides (6)	OAH or AG (5)	Non-IVD Hearing Officer (4)	IVD Conducts In-House Hearings (3)	Consent Order (2)	IVD Sets Order without Hearing (1)	Attorney Represents IVD Agency (1,1)	Score
Mississippi	U, C								14
Missouri				C			U	C	6
Montana					C		U		4
Nebraska	C	U						U, C	15
Nevada		U, C						U, C	14
New Hampshire		U, C							12
New Jersey		U, C							12
New Mexico		U, C						U, C	14
New York		U, C						U, C	14
North Carolina	C					U		U, C	11
North Dakota	U, C							U, C	16
Ohio					C	U		C	6
Oklahoma			C	U				U, C	11

Oregon			C				U		6
Pennsylvania		U, C							12
Rhode Island		U, C							12
South Carolina	C				U				10
South Dakota		C				U		C	9
Tennessee	U, C							U, C	16
Texas		U, C						U, C	14
Utah				C	U			C	8
Vermont		U, C							12
Virginia				C			U		5
Washington			C			U		U, C	9
West Virginia		U, C							12
Wisconsin	C	U						U, C	15
Wyoming		U, C						U, C	14

Appendix E
Correlations

Exhibit E.1: Correlations between Dependent and Explanatory Variables

	Cases with Orders	Current Collections	Cost Effectiveness	Collections on Arrears	Paternity Establishment
State Poverty	-0.50435	-0.29742	-0.29305	-0.26924	-0.14171
	(<.0001)	(0.0024)	(0.0028)	(0.0062)	(0.1554)
TANF Now	-0.25586	-0.07507	-0.32672	-0.19466	0.18432
	(0.0094)	(0.4534)	(0.0008)	(0.0499)	(0.0637)
Job Growth	-0.0042	-0.16916	-0.20482	0.20787	-0.09883
	(0.9666)	(0.0892)	(0.0389)	(0.036)	(0.323)
Percent Urban	-0.35063	-0.05029	-0.20712	-0.20741	0.28601
	(0.0003)	(0.6157)	(0.0367)	(0.0365)	(0.0036)
Men 20-64 Not Employed	-0.40191	-0.2779	-0.16274	-0.20358	0.1017
	(<.0001)	(0.0047)	(0.1022)	(0.0401)	(0.3091)
TANF Less Than 30	-0.14283	-0.13867	-0.09595	0.10409	-0.46185
	(0.1521)	(0.1645)	(0.3374)	(0.2978)	(<.0001)
Expenditure per Case	0.5484	0.37255	-0.25925	0.30881	0.24493
	(<.0001)	(0.0001)	(0.0085)	(0.0016)	(0.0131)
Population Stability	0.12685	0.32746	0.26668	-0.04745	0.2496
	(0.2039)	(0.0008)	(0.0067)	(0.6358)	(0.0114)
Per Capita Personal Income	-0.0375 (0.7082)	0.25477 (0.0098)	-0.07669 (0.4436)	-0.07334 (0.4638)	0.23572 (0.0171)
Cases per FTE	-0.60248	-0.4135	0.12492	-0.27707	-0.19646
	(<.0001)	(<.0001)	(0.2109)	(0.0048)	(0.0478)
Judicial/Admin Process	-0.50881	-0.15516	-0.08813	-0.09931	-0.18037
	(<.0001)	(0.1194)	(0.3784)	(0.3206)	(0.0697)
Universality Constant	-0.12168	-0.08436	0.14797	-0.08436	-0.06076

	(0.2231)	(0.3992)	(0.1377)	(0.3992)	(0.5441)
PEPIVDST	0.09875	-0.12287	0.11935	0.10291	-0.34216
	(0.3234)	(0.2186)	(0.2322)	(0.3034)	(0.0004)
CWO_DUM	0.13731	0.11302	-0.0718	-0.17367	-0.16932
	(0.1688)	(0.2581)	(0.4733)	(0.0809)	(0.0889)
COL_DUM	0.10705	-0.12193	-0.18365	-0.04268	-0.07244
	(0.2842)	(0.2222)	(0.0647)	(0.6701)	(0.4693)
CE_DUM	0.13976	0.01297	0.04512	-0.01489	-0.26982
	(0.1612)	(0.897)	(0.6525)	(0.8819)	(0.0061)
ARR_DUM	0.10611	-0.05089	-0.23332	-0.0791	-0.18262
	(0.2885)	(0.6115)	(0.0183)	(0.4294)	(0.0662)
PEP_DUM	0.20005	0.14068	-0.04539	0.08649	0.00859
	(0.0438)	(0.1584)	(0.6506)	(0.3874)	(0.9317)

Exhibit E.2: Correlations among Explanatory Variables Used in Regressions

	State Poverty	TANF Now	Job Growth	Percent Urban	ARR_DUM	Men 20-64 Not Employed	TANF Less Than 30	Expenditure Per Case
State Poverty	1.0000	0.18722	0.02365	-0.1015	0.15162	0.65726	0.05228	-0.45272
		(0.0595)	(0.8134)	(0.31)	(0.1282)	(<.0001)	(0.6018)	(<.0001)
TANF Now	0.18722	1.0000	0.14681	0.33087	0.08535	0.1562	-0.36158	0.0951
	(0.0595)		(0.1409)	(0.0007)	(0.3937)	(0.1169)	(0.0002)	(0.3417)
Job Growth	0.02365	0.14681	1.0000	0.15234	0.06967	-0.161	-0.14632	0.11618
	(0.8134)	(0.1409)		(0.1264)	(0.4865)	(0.106)	(0.1423)	(0.2449)
Percent Urban	-0.1015	0.33087	0.15234	1.0000	-0.04308	-0.0425	-0.32791	0.03575
	(0.31)	(0.0007)	(0.1264)		(0.6672)	(0.6715)	(0.0008)	(0.7213)
ARR_DUM	0.15162	0.08535	0.06967	-0.04308	1.0000	-0.03561	-0.0105	0.10713
	(0.1282)	(0.3937)	(0.4865)	(0.6672)		(0.7223)	(0.9166)	(0.2839)
Men 20-64 Not Employed	0.65726	0.1562	-0.161	-0.0425	-0.03561	1.0000	-0.1016	-0.35288
	(<.0001)	(0.1169)	(0.106)	(0.6715)	(0.7223)		(0.3097)	(0.0003)
TANF Less Than 30	0.05228	-0.36158	-0.14632	-0.32791	-0.0105	-0.10158	1.0000	-0.17893
	(0.6018)	(0.0002)	(0.1423)	(0.0008)	(0.9166)	(0.3097)		(0.072)
Expenditure Per	-0.45272	0.0951	0.11618	0.03575	0.10713	-0.35288	-0.17893	1.0000

Case								
	(<.0001)	(0.3417)	(0.2449)	(0.7213)	(0.2839)	(0.0003)	(0.072)	
Population Stability	-0.06997	0.22449	-0.32174	-0.03871	-0.03953	0.12158	-0.01787	-0.02282
	(0.4847)	(0.0233)	(0.001)	(0.6993)	(0.6933)	(0.2235)	(0.8586)	(0.8199)
CE_DUM	-0.13433	-0.11643	0.05069	0.00905	0.11396	-0.10194	0.04729	-0.03175
	(0.1783)	(0.2439)	(0.6129)	(0.9281)	(0.2541)	(0.308)	(0.6369)	(0.7514)
Per Capita Personal Income	-0.40109	0.24036	-0.02052	0.6836	0.05857	-0.2287	-0.30744	0.25708
	(<.0001)	(0.015)	(0.8378)	(<.0001)	(0.5587)	(0.0208)	(0.0017)	(0.0091)
Cases per FTE	0.25758	0.05043	-0.1728	0.12442	-0.15503	0.22327	0.15482	-0.75123
	(0.009)	(0.6147)	(0.0824)	(0.2128)	(0.1198)	(0.0241)	(0.1202)	(<.0001)
COL_DUM	0.04142	0.06465	0.04634	-0.06081	0.74128	-0.11953	-0.05796	0.08557
	(0.6793)	(0.5186)	(0.6438)	(0.5438)	(<.0001)	(0.2315)	(0.5628)	(0.3925)

Exhibit E.2: Correlations among Explanatory Variables Used in Regressions (continued)

	State Poverty	TANF Now	Job Growth	Percent Urban	ARR_DUM	Men 20-64 Not Employed	TANF Less Than 30	Expenditure Per Case
Judicial/Admin Process	0.25622	0.06131	0.01227	0.16472	-0.18559	0.06808	0.13314	-0.3265
	(0.0093)	(0.5404)	(0.9026)	(0.0981)	(0.0618)	(0.4966)	(0.1822)	(0.0008)
Universality Constant	-0.05506	-0.4963	-0.19426	-0.20859	-0.32515	0.1103	0.33974	-0.22966
	(0.5826)	(<.0001)	(0.0504)	(0.0354)	(0.0009)	(0.2698)	(0.0005)	(0.0202)
CWO_DUM	0.09147	-0.09236	-0.11047	-0.09891	0.51607	0.01433	-0.00012	0.03992
	(0.3606)	(0.3559)	(0.269)	(0.3226)	(<.0001)	(0.8863)	(0.9991)	(0.6904)
Iv-D/State Wide	0.04662	-0.08986	0.12433	-0.31874	-0.03457	-0.00328	0.19187	-0.1729
	(0.6417)	(0.3691)	(0.2131)	(0.0011)	(0.7301)	(0.9739)	(0.0534)	(0.0823)
PEP_DUM	0.00884	0.03186	-0.16223	-0.04903	0.25668	0.06192	0.02445	0.17734
	(0.9297)	(0.7505)	(0.1033)	(0.6246)	(0.0092)	(0.5364)	(0.8073)	(0.0746)

Exhibit E.2: Correlations among Explanatory Variables Used in Regressions (continued)

	Population Stability	CE_DUM	Per Capita Personal Income	Cases per FTE	COL_DUM	Judicial/Admin Process	Universality Constant	CWO_DUM	IV-D/State-Wide	PEP_DUM
State Poverty	-0.06997	-0.13433	-0.40109	0.25758	0.04142	0.25622	-0.05506	0.09147	0.04662	0.00884
	(0.4847)	(0.1783)	(<.0001)	(0.009)	(0.6793)	(0.0093)	(0.5826)	(0.3606)	(0.6417)	(0.9297)
TANF Now	0.22449	-0.11643	0.24036	0.05043	0.06465	0.06131	-0.4963	-0.09236	-0.08986	0.03186
	(0.0233)	(0.2439)	(0.015)	(0.6147)	(0.5186)	(0.5404)	(<.0001)	(0.3559)	(0.3691)	(0.7505)
Job Growth	-0.32174	0.05069	-0.02052	-0.1728	0.04634	0.01227	-0.19426	-0.11047	0.12433	-0.16223
	(0.001)	(0.6129)	(0.8378)	(0.0824)	(0.6438)	(0.9026)	(0.0504)	(0.269)	(0.2131)	(0.1033)
Percent Urban	-0.03871	0.00905	0.6836	0.12442	-0.06081	0.16472	-0.20859	-0.09891	-0.31874	-0.04903
	(0.6993)	(0.9281)	(<.0001)	(0.2128)	(0.5438)	(0.0981)	(0.0354)	(0.3226)	(0.0011)	(0.6246)
ARR_DUM	-0.03953	0.11396	0.05857	-0.15503	0.74128	-0.18559	-0.32515	0.51607	-0.03457	0.25668
	(0.6933)	(0.2541)	(0.5587)	(0.1198)	(<.0001)	(0.0618)	(0.0009)	(<.0001)	(0.7301)	(0.0092)
Men 20-64 Not Employed	0.12158	-0.10194	-0.2287	0.22327	-0.11953	0.06808	0.1103	0.01433	-0.00328	0.06192
	(0.2235)	(0.308)	(0.0208)	(0.0241)	(0.2315)	(0.4966)	(0.2698)	(0.8863)	(0.9739)	(0.5364)
TANF Less Than 30	-0.01787	0.04729	-0.30744	0.15482	-0.05796	0.13314	0.33974	-0.00012	0.19187	0.02445
	(0.8586)	(0.6369)	(0.0017)	(0.1202)	(0.5628)	(0.1822)	(0.0005)	(0.9991)	(0.0534)	(0.8073)
Expenditure Per	-0.02282	-0.03175	0.25708	-0.75123	0.08557	-0.3265	-0.22966	0.03992	-0.1729	0.17734

Case										
	(0.8199)	(0.7514)	(0.0091)	(<.0001)	(0.3925)	(0.0008)	(0.0202)	(0.6904)	(0.0823)	(0.0746)
Population Stability	1.0000	-0.09692	0.16726	0.09471	-0.12219	0.11429	-0.08807	0.02451	0.0107	0.14934
		(0.3325)	(0.0929)	(0.3437)	(0.2212)	(0.2527)	(0.3787)	(0.8068)	(0.915)	(0.1341)
CE_DUM	-0.09692	1.0000	0.0857	-0.04423	0.11396	-0.03569	0.03499	0.22176	0.13868	0.06762
	(0.3325)		(0.3918)	(0.659)	(0.2541)	(0.7217)	(0.727)	(0.0251)	(0.1645)	(0.4995)
Per Capita Personal Income	0.16726	0.0857	1.0000	-0.00232	0.01367	0.08932	-0.19866	0.00334	-0.25043	0.04212
	(0.0929)	(0.3918)		(0.9815)	(0.8916)	(0.372)	(0.0453)	(0.9734)	(0.0111)	(0.6742)
Cases per FTE	0.09471	-0.04423	-0.00232	1.0000	-0.13319	0.35635	0.10781	-0.01857	0.13208	-0.1243
	(0.3437)	(0.659)	(0.9815)		(0.182)	(0.0002)	(0.2808)	(0.8531)	(0.1857)	(0.2132)
COL_DUM	-0.12219	0.11396	0.01367	-0.13319	1.0000	-0.12796	-0.31417	0.51607	0.06618	0.14503
	(0.2212)	(0.2541)	(0.8916)	(0.182)		(0.1999)	(0.0013)	(<.0001)	(0.5087)	(0.1458)

Exhibit E.2: Correlations among Explanatory Variables Used in Regressions (continued)

	Population Stability	CE_DUM	Per Capita Personal Income	Cases per FTE	COL_DUM	Judicial/Admin Process	Universality Constant	CWO_DUM	IV-D/State-Wide	PEP_DUM
Judicial/Admin Process	0.11429	-0.03569	0.08932	0.35635	-0.12796	1.0000	0.05715	-0.05277	0.1353	-0.22125
	(0.2527)	(0.7217)	(0.372)	(0.0002)	(0.1999)		(0.5683)	(0.5984)	(0.1752)	(0.0254)
Universality Constant	-0.08807	0.03499	-0.19866	0.10781	-0.31417	0.05715	1.0000	-0.22586	-0.0039	-0.15444
	(0.3787)	(0.727)	(0.0453)	(0.2808)	(0.0013)	(0.5683)		(0.0225)	(0.969)	(0.1212)
CWO_DUM	0.02451	0.22176	0.00334	-0.01857	0.51607	-0.05277	-0.22586	1.0000	-0.00572	0.30117
	(0.8068)	(0.0251)	(0.9734)	(0.8531)	<.0001	(0.5984)	(0.0225)		(0.9545)	(0.0021)
Iv-D/State Wide	0.0107	0.13868	-0.25043	0.13208	0.06618	0.1353	-0.0039	-0.00572	1.0000	-0.208
	(0.915)	(0.1645)	(0.0111)	(0.1857)	(0.5087)	(0.1752)	(0.969)	(0.9545)		(0.0359)
PEP_DUM	0.14934	0.06762	0.04212	-0.1243	0.14503	-0.22125	-0.15444	0.30117	-0.208	1.0000
	(0.1341)	(0.4995)	(0.6742)	(0.2132)	(0.1458)	(0.0254)	(0.1212)	(0.0021)	(0.0359)	

Appendix F
Regression Results

REGRESSION RESULTS – 1999

Dependent Variable: Cases with Orders

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	6	8058.83138	1343.13856	17.81	<.0001
Error	38	2865.73422	75.41406		
Corrected Total	44	10925			

Root MSE	8.68413	R-Square	0.7377
Dependent Mean	63.82000	Adj R-Sq	0.6963
Coeff Var	13.60722		

NOTE: Model is not full rank. Least-squares solutions for the parameters are not unique. Some statistics will be misleading. A reported DF of 0 or B means that the estimate is biased.

NOTE: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

CWO_DUM = Intercept

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|

Intercept	B	38.11457	48.19014	0.79	0.4339
STPOVRT	1	-1.72314	0.42118	-4.09	0.0002
PCTURB	1	-0.21085	0.06864	-3.07	0.0039
CASEFTE	1	-0.04117	0.01088	-3.78	0.0005
JUDADMIN	1	-1.05489	0.41867	-2.52	0.0161
pop_stab	1	1.07315	0.58016	1.85	0.0721
TANFNOW	1	-0.24246	0.17539	-1.38	0.1749
CWO_DUM	0	0	.	.	.

Dependent Variable: Current Collections

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	2247.46729	280.93341	6.55	<.0001
Error	36	1544.36561	42.89904		
Corrected Total	44	3791.83290			

Root MSE	6.54974	R-Square	0.5927
Dependent Mean	52.91422	Adj R-Sq	0.5022
Coeff Var	12.37803		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.99442	36.94354	-0.03	0.9787
PERSINC	1	0.00080114	0.00037687	2.13	0.0404
M20_64	1	-0.95811	0.33731	-2.84	0.0074
PCTURB	1	-0.10495	0.07267	-1.44	0.1573
TANFLT30	1	-0.48680	0.19932	-2.44	0.0196
CASEFTE	1	-0.01677	0.00842	-1.99	0.0539
TANFNOW	1	-0.25107	0.13560	-1.85	0.0723
pop_stab	1	1.13452	0.45841	2.47	0.0182
COL_DUM	1	-6.79280	3.15975	-2.15	0.0384

Dependent Variable: Cost Effectiveness

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	6	42.91440	7.15240	12.14	<.0001
Error	38	22.39370	0.58931		
Corrected Total	44	65.30810			

Root MSE	0.76766	R-Square	0.6571
Dependent Mean	4.37978	Adj R-Sq	0.6030
Coeff Var	17.52746		

NOTE: Model is not full rank. Least-squares solutions for the parameters are not unique. Some statistics will be misleading. A reported DF of 0 or B means that the estimate is biased.

NOTE: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

CE_DUM = Intercept

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	B	-0.17285	4.20138	-0.04	0.9674
M20_64	1	-0.15836	0.04032	-3.93	0.0003

PCTURB	1	-0.01465	0.00593	-2.47	0.0181
TANFNOW	1	-0.07029	0.01596	-4.40	<.0001
TANFLT30	1	-0.12811	0.02263	-5.66	<.0001
EXPCAS	1	-0.00527	0.00155	-3.41	0.0016
pop_stab	1	0.20483	0.04860	4.22	0.0001
CE_DUM	0	0	.	.	.

Dependent Variable: Collection on Arrears

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	3294.53507	658.90701	9.35	<.0001
Error	39	2748.98321	70.48675		
Corrected Total	44	6043.51828			

Root MSE	8.39564	R-Square	0.5451
Dependent Mean	54.95600	Adj R-Sq	0.4868
Coeff Var	15.27702		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	65.59074	6.66817	9.84	<.0001
STPOVRT	1	-1.19645	0.36306	-3.30	0.0021
TANFNOW	1	-0.24949	0.15728	-1.59	0.1207
JOBGRWTH	1	4.34290	1.16237	3.74	0.0006
PCTURB	1	-0.11958	0.06277	-1.91	0.0642
ARR_DUM	1	7.81109	4.06190	1.92	0.0618

Dependent Variable: Paternity Statewide

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	2923.77378	584.75476	3.11	0.0357
Error	17	3195.44908	187.96759		
Corrected Total	22	6119.22286			

Root MSE	13.71013	R-Square	0.4778
Dependent Mean	88.80130	Adj R-Sq	0.3242
Coeff Var	15.43911		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-196.97060	89.52135	-2.20	0.0419
PERSINC	1	0.00088009	0.00071107	1.24	0.2327
TANFNOW	1	-0.75988	0.42356	-1.79	0.0906
EXPCAS	1	0.05738	0.03104	1.85	0.0820
pop_stab	1	3.07175	1.12218	2.74	0.0140
PEP_DUM	1	10.59652	6.40171	1.66	0.1162

Dependent Variable: Paternity IV-D

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	10989	2747.21859	4.11	0.0165
Error	17	11366	668.57553		
Corrected Total	21	22355			

Root MSE	25.85683	R-Square	0.4916
Dependent Mean	68.41909	Adj R-Sq	0.3719
Coeff Var	37.79183		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	286.43091	58.80865	4.87	0.0001
STPOVRT	1	-3.15780	1.95746	-1.61	0.1251
TANFLT30	1	-3.83554	1.18152	-3.25	0.0047
UNICONST	1	1.13697	0.52791	2.15	0.0459
PEP_DUM	1	-11.79717	14.62399	-0.81	0.4310

REGRESSION RESULTS – 2000

Dependent Variable: Cases with Orders

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	7	8182.66666	1168.95238	14.70	<.0001
Error	37	2942.31918	79.52214		
Corrected Total	44	11125			

Root MSE	8.91752	R-Square	0.7355
Dependent Mean	65.20356	Adj R-Sq	0.6855
Coeff Var	13.67643		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	67.43889	49.03867	1.38	0.1773
STPOVRT	1	-2.12308	0.51548	-4.12	0.0002
PCTURB	1	-0.23829	0.07220	-3.30	0.0021
CASEFTE	1	-0.04560	0.01244	-3.67	0.0008
JUDADMIN	1	-0.83898	0.43343	-1.94	0.0606
pop_stab	1	0.67485	0.59123	1.14	0.2610
TANFNOW	1	-0.28561	0.20797	-1.37	0.1779
CWO_DUM	1	8.59857	9.53486	0.90	0.3730

Dependent Variable: Current Collections

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	2844.56323	355.57040	10.15	<.0001
Error	36	1260.82360	35.02288		
Corrected Total	44	4105.38683			

Root MSE	5.91801	R-Square	0.6929
Dependent Mean	55.20244	Adj R-Sq	0.6246
Coeff Var	10.72056		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	45.55787	36.95822	1.23	0.2257
PERSINC	1	0.00024425	0.00029627	0.82	0.4151
M20_64	1	-1.35673	0.34473	-3.94	0.0004
PCTURB	1	-0.08300	0.06254	-1.33	0.1928
TANFLT30	1	-0.42740	0.17910	-2.39	0.0224
CASEFTE	1	-0.01980	0.00816	-2.43	0.0204
TANFNOW	1	-0.11326	0.13873	-0.82	0.4196
pop_stab	1	0.91014	0.43117	2.11	0.0418
COL_DUM	1	-18.42370	4.23813	-4.35	0.0001

Dependent Variable: Cost Effectiveness

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	7	22.17630	3.16804	5.16	0.0004
Error	37	22.70836	0.61374		
Corrected Total	44	44.88466			

Root MSE	0.78342	R-Square	0.4941
Dependent Mean	4.15622	Adj R-Sq	0.3984
Coeff Var	18.84921		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	1.50479	4.30287	0.35	0.7285
M20_64	1	-0.09694	0.04241	-2.29	0.0281
PCTURB	1	-0.01526	0.00609	-2.51	0.0167
TANFNOW	1	-0.02716	0.01914	-1.42	0.1643
TANFLT30	1	-0.07066	0.02314	-3.05	0.0042
EXPCAS	1	-0.00375	0.00135	-2.78	0.0085
pop_stab	1	0.09588	0.04942	1.94	0.0600
CE_DUM	1	2.21300	0.87449	2.53	0.0158

Dependent Variable: Collection on Arrears

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	1021.89538	204.37908	2.47	0.0491
Error	39	3230.61302	82.83623		
Corrected Total	44	4252.50840			

Root MSE	9.10144	R-Square	0.2403
Dependent Mean	59.62667	Adj R-Sq	0.1429
Coeff Var	15.26404		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	82.68194	8.41862	9.82	<.0001
STPOVRT	1	-0.88484	0.45177	-1.96	0.0573
TANFNOW	1	-0.11058	0.19469	-0.57	0.5733
JOBGRWTH	1	2.15906	1.42211	1.52	0.1370
PCTURB	1	-0.14487	0.07072	-2.05	0.0473
ARR_DUM	1	-6.74237	5.61029	-1.20	0.2367

Dependent Variable: Paternity Statewide

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	1747.13856	349.42771	1.30	0.3116
Error	17	4584.33190	269.66658		
Corrected Total	22	6331.47046			

Root MSE	16.42153	R-Square	0.2759
Dependent Mean	93.73130	Adj R-Sq	0.0630
Coeff Var	17.51979		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-25.00667	102.43068	-0.24	0.8101
PERSINC	1	0.00076102	0.00077996	0.98	0.3429
TANFNOW	1	-0.63777	0.57307	-1.11	0.2812
EXPCAS	1	0.04935	0.03128	1.58	0.1330
pop_stab	1	1.24653	1.32069	0.94	0.3585
PEP_DUM	1	-10.57115	18.12064	-0.58	0.5673

Dependent Variable: Paternity IV-D

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	14406	3601.42062	4.18	0.0154
Error	17	14639	861.13252		
Corrected Total	21	29045			

Root MSE	29.34506	R-Square	0.4960
Dependent Mean	82.39227	Adj R-Sq	0.3774
Coeff Var	35.61628		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	343.54272	65.05518	5.28	<.0001
STPOVRT	1	-0.32810	2.57848	-0.13	0.9002
TANFLT30	1	-5.06439	1.46204	-3.46	0.0030
UNICONST	1	0.64169	0.59600	1.08	0.2967
PEP_DUM	1	-15.59723	13.03936	-1.20	0.2480

REGRESSION RESULTS – COMBINED 1999 AND 2000 DATA

Dependent Variable: Cases with Orders

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	7	16172	2310.26840	32.00	<.0001
Error	82	5920.74271	72.20418		
Corrected Total	89	22093			

Root MSE	8.49730	R-Square	0.7320
Dependent Mean	64.51178	Adj R-Sq	0.7091
Coeff Var	13.17171		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	46.32065	33.59320	1.38	0.1717
STPOVRT	1	-1.85119	0.31065	-5.96	<.0001
PCTURB	1	-0.22225	0.04791	-4.64	<.0001
CASEFTE	1	-0.04350	0.00791	-5.50	<.0001
JUDADMIN	1	-0.96685	0.29015	-3.33	0.0013
pop_stab	1	0.87550	0.39952	2.19	0.0313
TANFNOW	1	-0.24927	0.12911	-1.93	0.0570
CWO_DUM	1	9.77286	8.75448	1.12	0.2675

Dependent Variable: Current Collections

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	4877.05749	609.63219	15.74	<.0001
Error	81	3137.97136	38.74039		
Corrected Total	89	8015.02885			

Root MSE	6.22418	R-Square	0.6085
Dependent Mean	54.05833	Adj R-Sq	0.5698
Coeff Var	11.51382		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	10.42757	25.40170	0.41	0.6825
PERSINC	1	0.00057535	0.00022367	2.57	0.0119
M20_64	1	-0.99100	0.23168	-4.28	<.0001
PCTURB	1	-0.09525	0.04659	-2.04	0.0442
TANFLT30	1	-0.44638	0.13347	-3.34	0.0013
CASEFTE	1	-0.02098	0.00570	-3.68	0.0004
TANFNOW	1	-0.21156	0.09531	-2.22	0.0292
pop_stab	1	1.09400	0.30958	3.53	0.0007
COL_DUM	1	-10.08189	2.38688	-4.22	<.0001

Dependent Variable: Cost Effectiveness

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	7	61.75004	8.82143	14.59	<.0001
Error	82	49.56720	0.60448		
Corrected Total	89	111.31724			

Root MSE	0.77748	R-Square	0.5547
Dependent Mean	4.26800	Adj R-Sq	0.5167
Coeff Var	18.21654		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.30544	3.04429	0.10	0.9203
M20_64	1	-0.13110	0.02909	-4.51	<.0001
PCTURB	1	-0.01486	0.00424	-3.50	0.0008
TANFNOW	1	-0.05144	0.01205	-4.27	<.0001
TANFLT30	1	-0.10012	0.01621	-6.18	<.0001
EXPCAS	1	-0.00473	0.00098584	-4.80	<.0001
pop_stab	1	0.14968	0.03465	4.32	<.0001
CE_DUM	1	1.71274	0.81446	2.10	0.0385

Dependent Variable: Collection on Arrears

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	3662.58564	732.51713	8.64	<.0001
Error	84	7124.28140	84.81287		
Corrected Total	89	10787			

Root MSE	9.20939	R-Square	0.3395
Dependent Mean	57.29133	Adj R-Sq	0.3002
Coeff Var	16.07467		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	74.06576	5.37450	13.78	<.0001
STPOVRT	1	-1.14122	0.29205	-3.91	0.0002
TANFNOW	1	-0.22366	0.12920	-1.73	0.0871
JOBGRWTH	1	2.93334	0.88114	3.33	0.0013
PCTURB	1	-0.15171	0.04882	-3.11	0.0026
ARR_DUM	1	4.65317	3.31266	1.40	0.1638

Dependent Variable: Paternity Statewide

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	4214.88192	842.97638	3.96	0.0052
Error	40	8515.31775	212.88294		
Corrected Total	45	12730			

Root MSE	14.59051	R-Square	0.3311
Dependent Mean	91.26630	Adj R-Sq	0.2475
Coeff Var	15.98674		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-100.19997	65.34693	-1.53	0.1331
PERSINC	1	0.00073698	0.00049836	1.48	0.1470
TANFNOW	1	-0.68997	0.32361	-2.13	0.0392
EXPCAS	1	0.04996	0.02071	2.41	0.0205
pop_stab	1	1.99819	0.83049	2.41	0.0208
PEP_DUM	1	5.03522	5.81134	0.87	0.3914

Dependent Variable: Paternity IV-D

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	25688	6422.06442	8.99	<.0001
Error	39	27859	714.33549		
Corrected Total	43	53547			

Root MSE	26.72706	R-Square	0.4797
Dependent Mean	75.40568	Adj R-Sq	0.4264
Coeff Var	35.44435		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	315.59308	42.03853	7.51	<.0001
STPOVRT	1	-2.34203	1.47281	-1.59	0.1199
TANFLT30	1	-4.30330	0.89319	-4.82	<.0001
UNICONST	1	0.89976	0.38263	2.35	0.0238
PEP_DUM	1	-16.44151	8.91646	-1.84	0.0728

Appendix G
Spearman Correlations

Spearman Correlation Coefficient

Cases with Orders

2 Variables: CWOACT CWOADJ

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
CWOACT	45	65.20356	15.90096	66.29000	26.20000	92.59000
CWOADJ	45	65.20356	11.94367	66.62279	32.06021	91.67899

Spearman Correlation Coefficients, N = 45

Prob > |r| under H0: Rho=0

	CWOACT	CWOADJ
CWOACT	1.00000	0.89736
		<.0001
CWOADJ	0.89736	1.00000
	<.0001	

Spearman Correlation Coefficient

Current Collections

2 Variables: COLACT COLADJ

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
COLACT	45	55.20244	9.65941	55.81000	35.15000	76.64000
COLADJ	45	55.20244	7.68945	54.57951	34.13689	76.77304

Spearman Correlation Coefficients, N = 45

Prob > |r| under H0: Rho=0

	COLACT	COLADJ
COLACT	1.00000	0.73715
		<.0001
COLADJ	0.73715	1.00000
	<.0001	

Spearman Correlation Coefficient

Cost Effectiveness

2 Variables: CEACT CEADJ

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
CEACT	45	4.15622	1.01000	4.11000	1.31000	6.95000
CEADJ	45	4.15622	1.00850	4.05120	1.52836	6.81825

Spearman Correlation Coefficients, N = 45

Prob > |r| under H0: Rho=0

	CEACT	CEADJ
CEACT	1.00000	0.56140
		<.0001
CEADJ	0.56140	1.00000
	<.0001	

Spearman Correlation Coefficient

Collection on Arrears

2 Variables: ARRACT ARRADJ

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
ARRACT	45	59.62667	9.83097	57.81000	33.17000	82.66000
ARRADJ	45	59.62667	8.88538	60.05794	36.11089	80.54704

Spearman Correlation Coefficients, N = 45

Prob > |r| under H0: Rho=0

	ARRACT	ARRADJ
ARRACT	1.00000	0.84769
		<.0001
ARRADJ	0.84769	1.00000
	<.0001	