



Modeling the TANF Caseload in Colorado: Preliminary Findings from the Colorado Works Caseload Modeling Project

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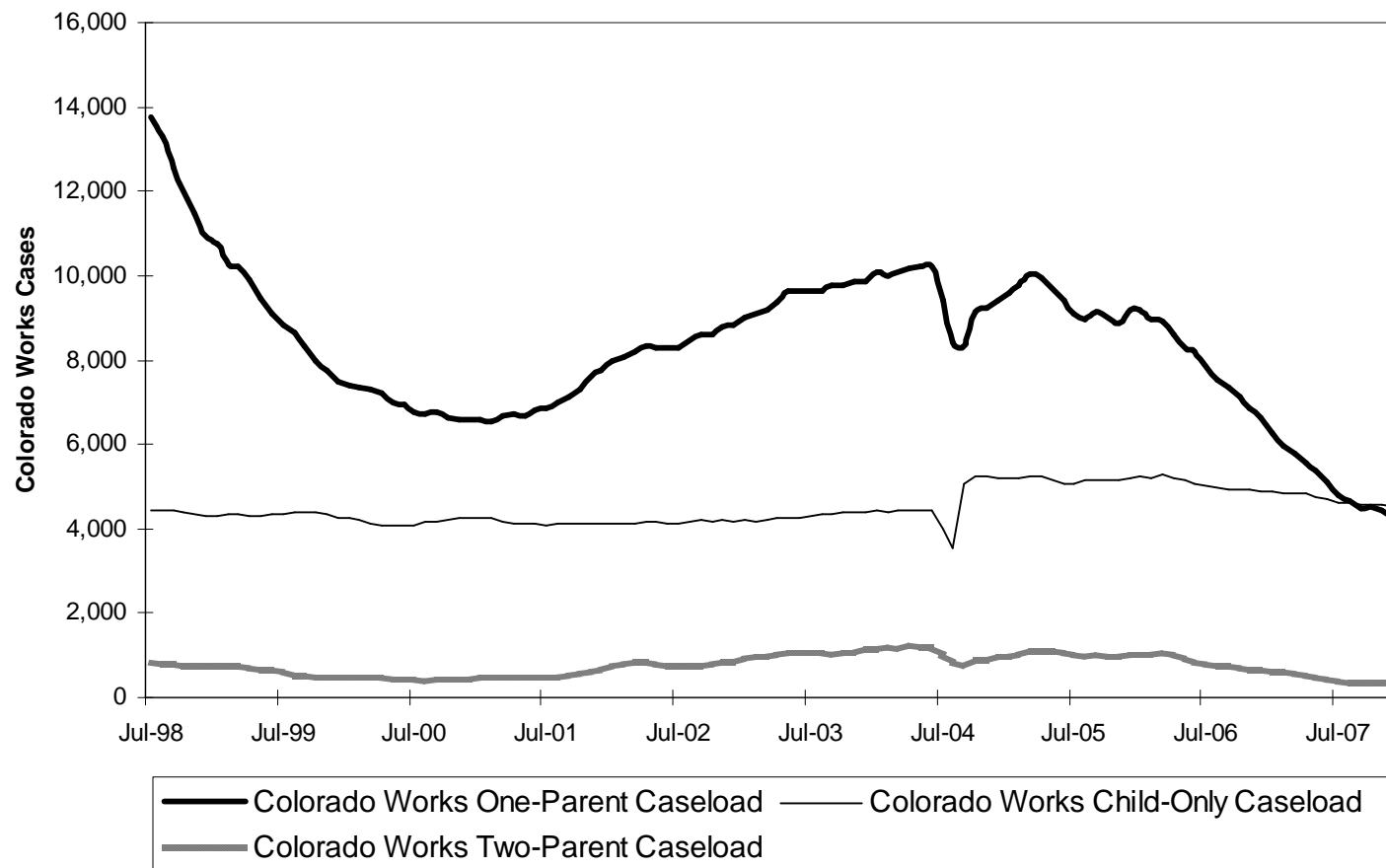
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Project Background

- Purpose of the project: To develop statistical models that determine the effects the economy, population, and program have on the size of the Colorado Works caseload from July 1999 to December 2007
- Approach: Data on potential factors is analyzed using regression analysis to determine the impact on the caseload and to predict how changes might affect caseload size in the future
- Limitations:
 - For time series data, many factors change at the same time
 - Some important variables are not available for the analysis
 - Some potential factors do not vary in the period studied
- All of these factors can lead to incorrect estimates

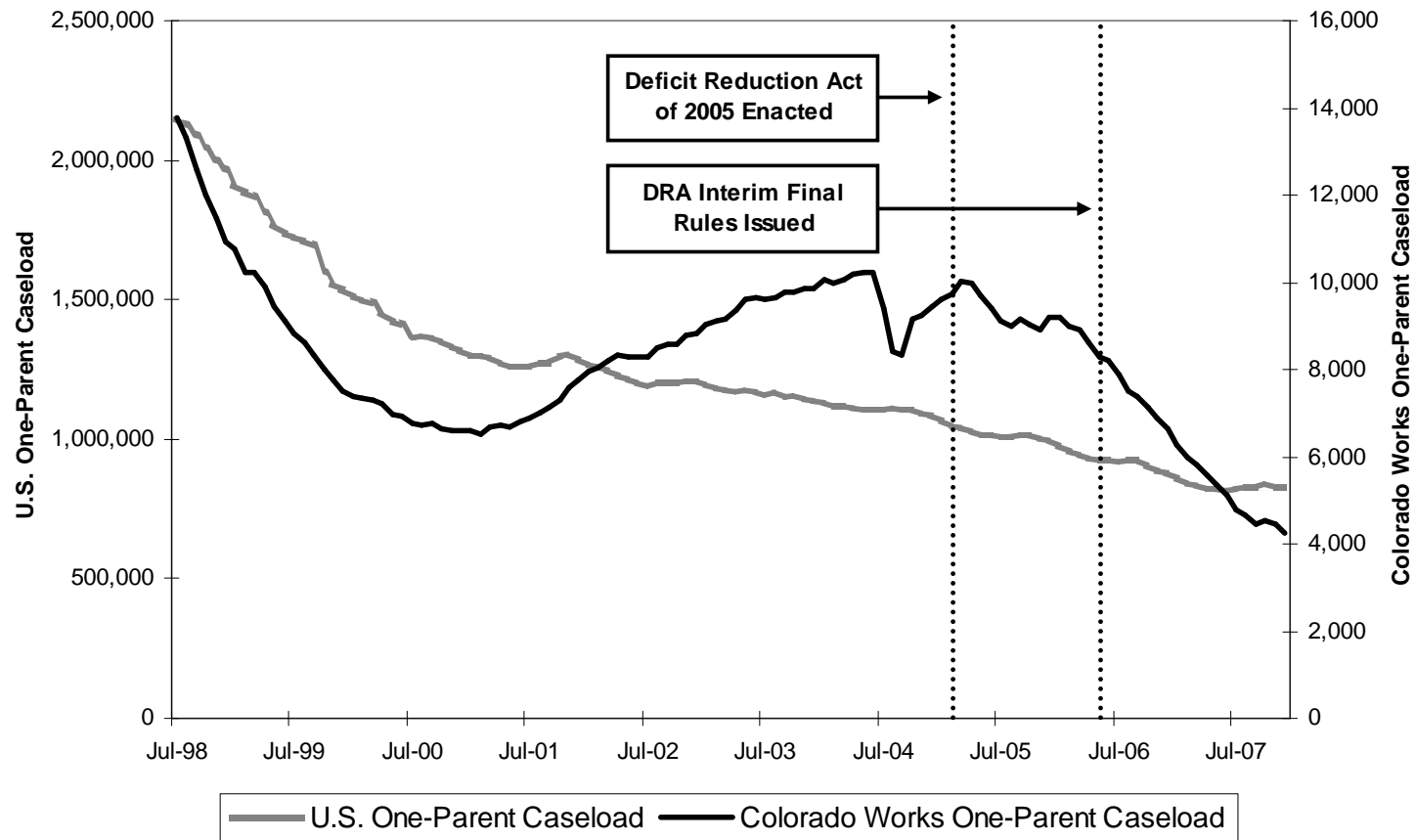
The One-Parent Caseload Has Varied Significantly, but the Others Have Remained Flat

Recent Trends in the Colorado Works
One-Parent, Two-Parent and Child-Only Caseloads



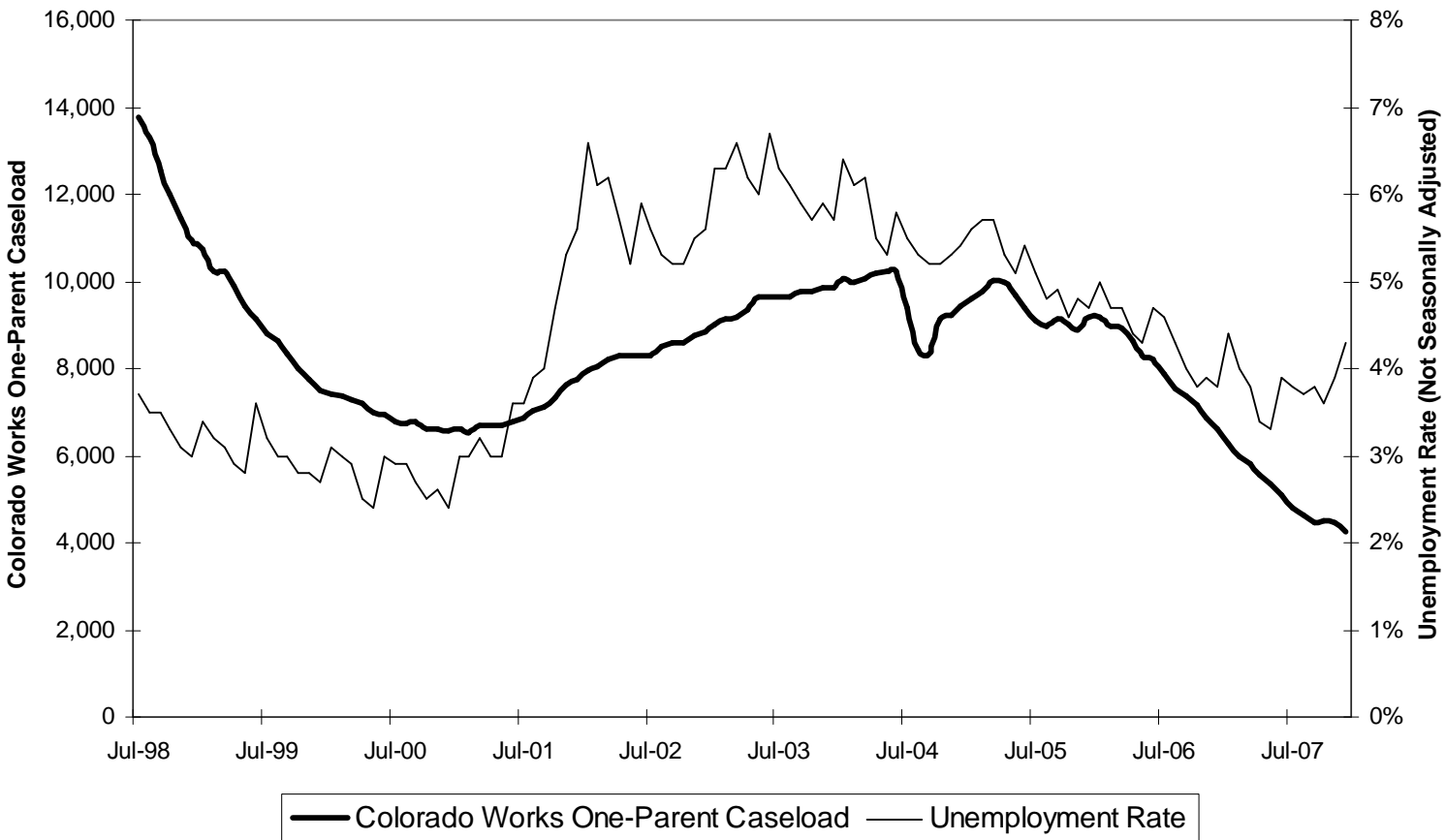
Colorado Has Had More Variation in the Size of the Caseload than National Trend

Colorado Works and U.S. One-Parent Caseloads in Relation to Federal Policy Changes



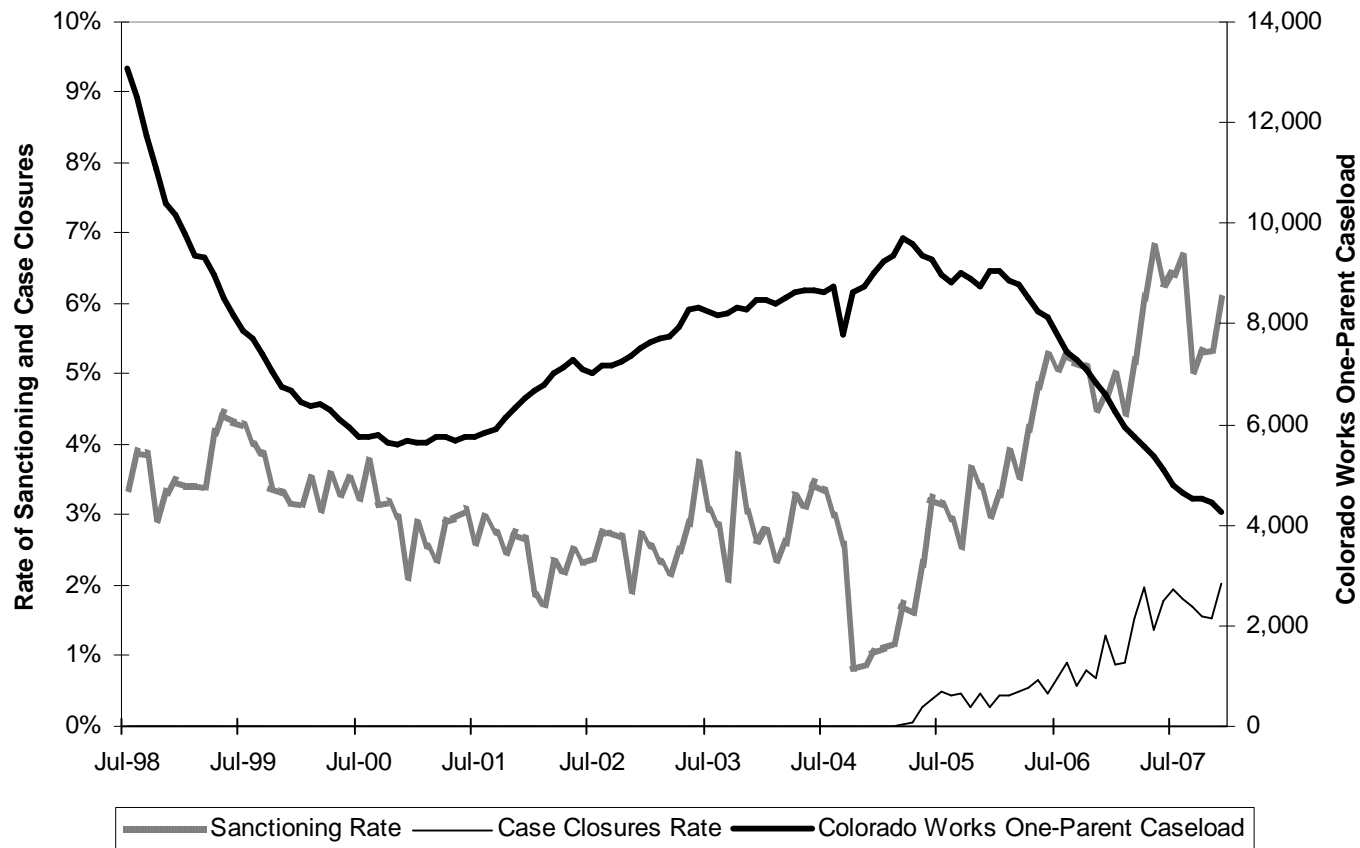
The One-Parent Caseload Varies with the Unemployment Rate

Colorado Works One-Parent Caseload and the Colorado Unemployment Rate



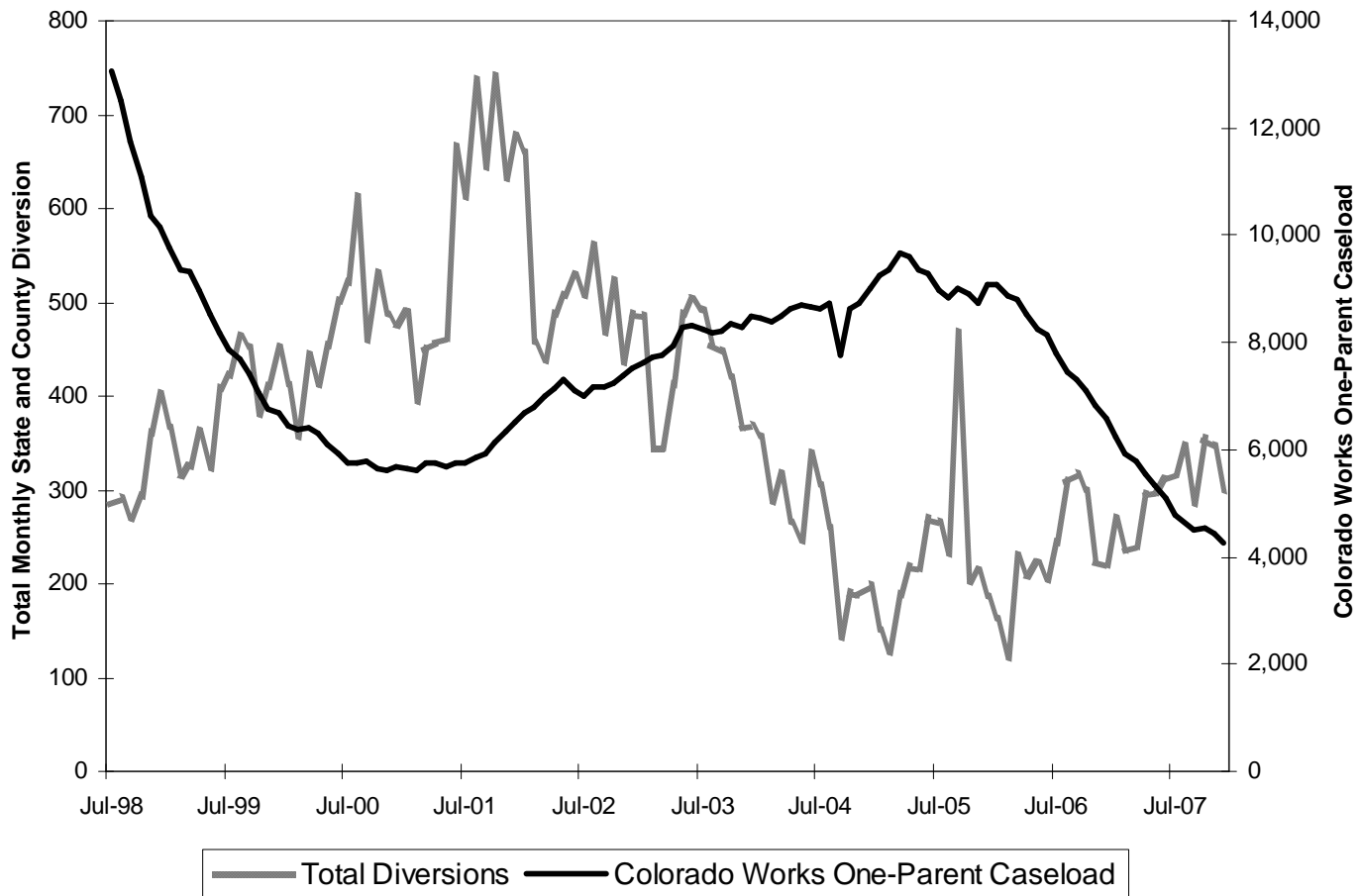
The Sanction Rate is Inversely Related to the Caseload Size

Rates of Formal Sanctioning and Administrative Case Closures for Demonstrable Evidence in the Colorado Works One-Parent Caseload



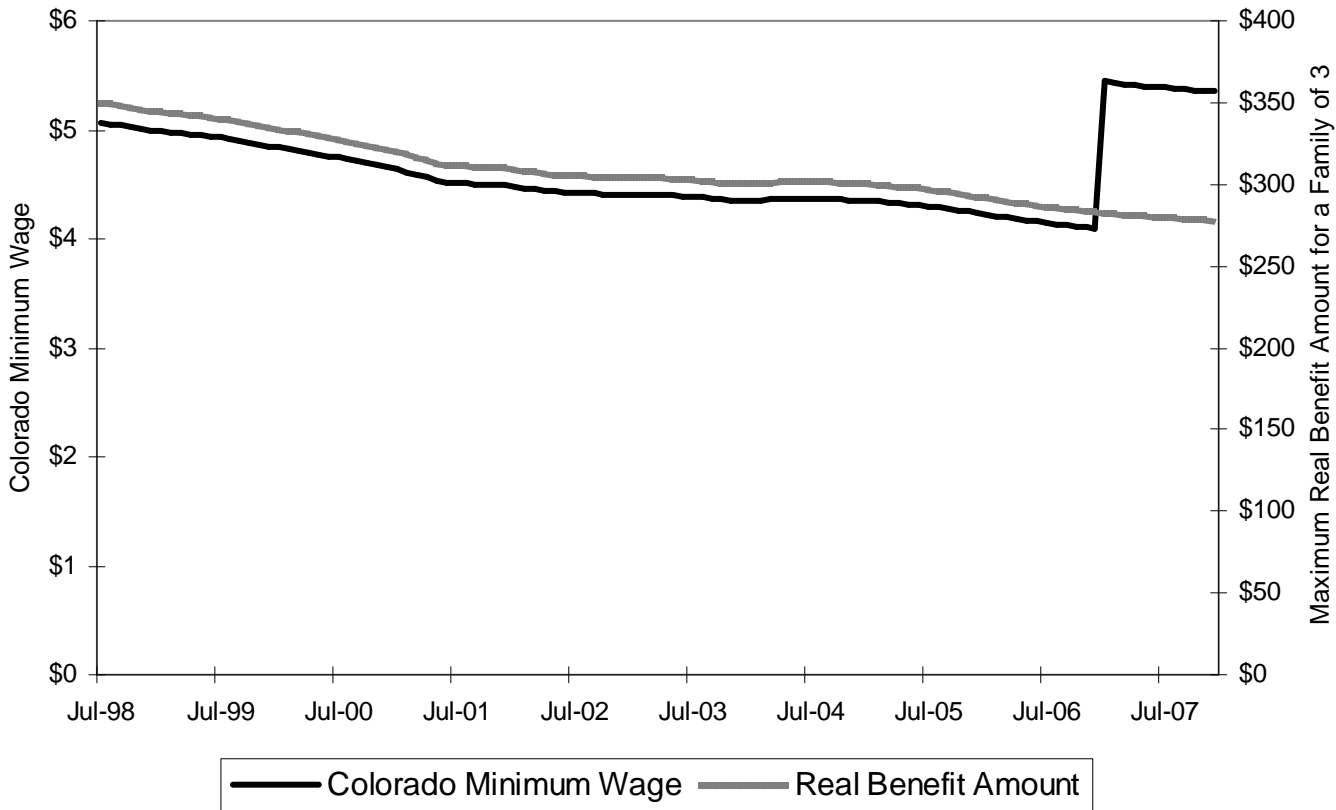
Diversions are Negatively Associated with Caseload Size

Total Diversions Paid in Colorado Works



The Inflation-Adjusted Maximum Benefit and Minimum Wage Declined Over the Years Studied

Family of Three Maximum Benefit and Colorado Minimum Wage (Inflation Adjusted to 1998 Dollars)



The Unemployment Rate for the Most Recent Three Years is the Key Factor Affecting the One-Parent Caseload

One-Parent Caseload Regression

Unemployment Rates (Not Seasonally Adjusted):

Current	-89.042 (87.600)
1 Month Lag	398.403 (99.965)***
3 Month Lag	211.720 (80.385)**
6 Month Lag	89.593 (67.939)
12 Month Lag	401.008 (51.917)***
24 Month Lag	325.399 (35.790)***
36 Month Lag	50.410 (119.582)

Policy Issues and Changes:

DRA Interim Final Rule	-642.655 (139.437)***
Total State and County Diversions	0.511 (0.516)
Maximum Benefit for a Family of 3 (Inflation Adjusted)	-56.230 (18.974)***
Combined Sanction and Administrative Closure Rate	-71.503 (34.655)**
CBMS Computer System	322.053 (456.621)

Other Factors:

State Population Size	-9.056 (1.658)***
Colorado Minimum Wage (Inflation Adjusted)	-855.264 (120.871)***
Quarter 1	-211.196 (102.702)**
Quarter 2	40.447 (71.425)
Quarter 3	-130.831 (75.434)*
Constant	64,202.917 (13,458.328)***
Observations	96
R-squared	0.98
Durbin-Watson Statistic	1.34

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Few Factors Have a Significant Impact on the Child-Only Caseload

Child-Only Caseload Regression¹

Unemployment Rates (Not Seasonally Adjusted):

Current	-27.697 (16.637)*
1 Month Lag	-0.642 (14.297)
3 Month Lag	18.885 (11.222)*
6 Month Lag	-7.099 (13.742)
12 Month Lag	16.362 (19.455)
24 Month Lag	18.011 (19.824)
36 Month Lag	-6.137 (23.572)

Policy Issues and Changes:

DRA Interim Final Rule	-56.659 (18.378)***
Total State and County Diversions	0.064 (0.060)
Maximum Benefit for a Family of 3 (Inflation Adjusted)	-3.512 (8.667)
Combined Sanction and Administrative Closure Rate	12.221 (27.062)
CBMS Computer System	928.536 (289.996)***

Other Factors:

State Population Size	-1.089 (0.601)*
Colorado Minimum Wage (Inflation Adjusted)	10.918 (10.630)
Quarter 1	9.205 (16.603)
Quarter 2	-4.162 (15.005)
Quarter 3	-12.155 (11.550)

Constant

10,079.310
(5,243.264)*

Observations

96

R-squared

0.91

Durbin-Watson Statistic

1.56

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

¹ Adjusted for Autocorrelation utilizing the Prais-Winsten Method

The Unemployment Rate for the Most Recent Three Years is the Key Factor Affecting the Two-Parent Caseload

Two-Parent Caseload Regression

Unemployment Rates (Not Seasonally Adjusted):

Current	-31.938 (16.978)*
1 Month Lag	101.995 (17.887)***
3 Month Lag	34.170 (13.372)**
6 Month Lag	4.830 (12.453)
12 Month Lag	60.205 (9.220)***
24 Month Lag	63.772 (6.394)***
36 Month Lag	-5.322 (25.207)

Policy Issues and Changes:

DRA Interim Final Rule	-147.236 (23.026)***
Total State and County Diversions	0.095 (0.099)
Maximum Benefit for a Family of 3 (Inflation Adjusted)	-8.041 (3.423)**
Combined Sanction and Administrative Closure Rate	6.741 (3.463)*
CBMS Computer System	29.397 (90.014)

Other Factors:

State Population Size	-0.775 (0.310)**
Colorado Minimum Wage (Inflation Adjusted)	-140.943 (18.722)***
Quarter 1	8.404 (19.717)
Quarter 2	23.472 (13.010)*
Quarter 3	-39.384 (12.314)***
Constant	6,320.801 (2,506.273)**

Observations

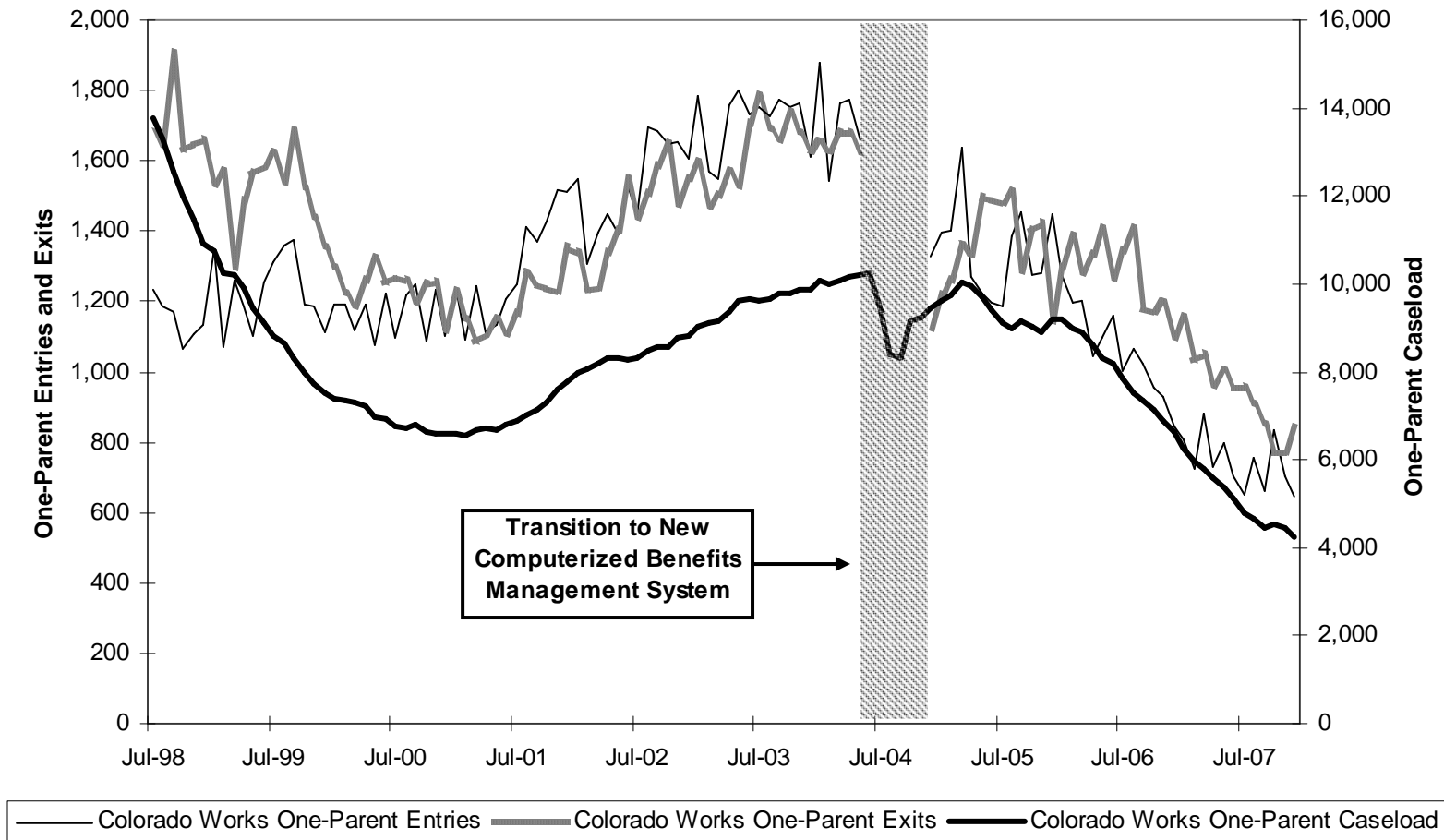
Observations	96
R-squared	0.98
Durbin-Watson Statistic	1.29

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

One-Parent Caseload Entries and Exits have Remained closely Aligned over Time

Colorado Works One-Parent Caseload and Associated Entry and Exit Rates



One-Parent Entries Affected by Unemployment Rate, Diversions, and Sanctions

One-Parent Entry Regression

Unemployment Rates (Not Seasonally Adjusted):

Current	54.582 (40.605)
1 Month Lag	-35.728 (42.788)
3 Month Lag	72.981 (32.969)**
6 Month Lag	-3.632 (28.922)
12 Month Lag	92.973 (19.412)***
24 Month Lag	22.260 (18.471)
36 Month Lag	-9.242 (44.932)

Policy Issues and Changes:

DRA Interim Final Rule	-151.174 (55.544)***
Total State and County Diversions	0.474 (0.180)**
Maximum Benefit for a Family of 3 (Inflation Adjusted)	-6.950 (7.036)
Combined Sanction and Administrative Closure Rate	-21.163 (11.522)*
CBMS Computer System	-186.373 (143.023)

Other Factors:

State Population Size	-0.765 (0.582)
Colorado Minimum Wage (Inflation Adjusted)	-82.551 (34.472)**
Quarter 1	-34.728 (38.152)
Quarter 2	-55.963 (31.312)*
Quarter 3	13.406 (32.570)
Constant	6,413.961 (4,895.534)
Observations	96
R-squared	0.93
Durbin-Watson Statistic	1.91

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Sanction Rate Is Major Factor Affecting Exits from One-Parent Caseload

One-Parent Exit Regression

Unemployment Rates (Not Seasonally Adjusted):

Current	7.258 (33.251)
1 Month Lag	-53.637 (35.401)
3 Month Lag	45.507 (31.302)
6 Month Lag	29.306 (18.638)
12 Month Lag	14.288 (18.416)
24 Month Lag	-14.951 (12.346)
36 Month Lag	9.028 (36.493)

Other Factors:

State Population Size	0.142 (0.034)***
Colorado Minimum Wage (Inflation Adjusted)	-20.047 (50.291)
Quarter 1	-5.114 (40.314)
Quarter 2	-32.452 (26.300)
Quarter 3	30.739 (26.745)
Constant	-916.833 (570.003)

Policy Issues and Changes:

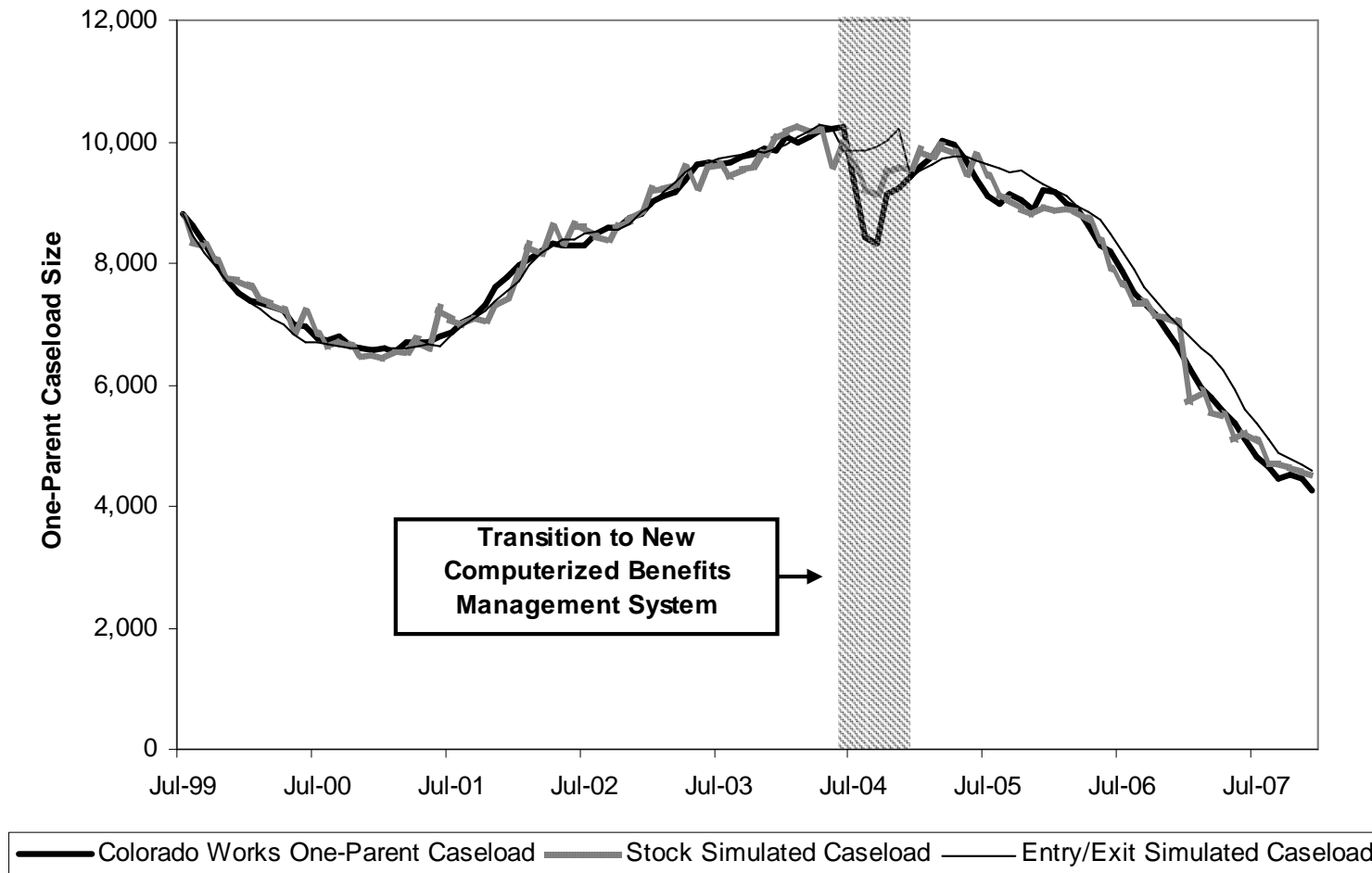
DRA Interim Final Rule	-4.498 (59.038)
Total State and County Diversions	0.149 (0.189)
Maximum Benefit for a Family of 3 (Inflation Adjusted)	2.806 (2.110)
Combined Sanction and Administrative Closure Rate	66.005 (13.000)***
CBMS Computer System	-216.291 (125.953)*

Observations	96
R-squared	0.92
Durbin-Watson Statistic	1.78

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

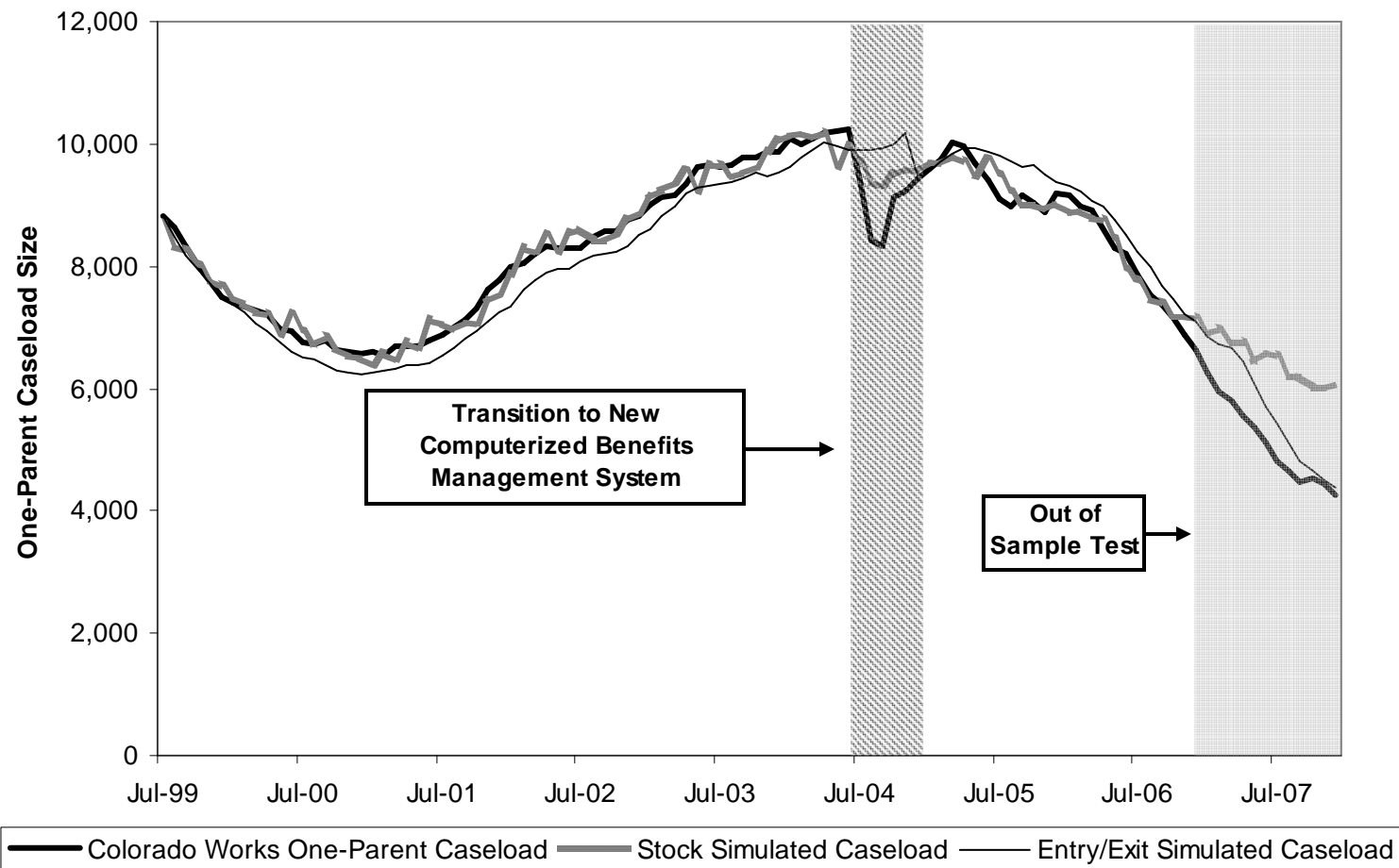
Both Stock Model and Entry/Exit Model do a Good Job of Tracking the One-Parent Caseload

Actual versus Simulated Colorado Works One-Parent Caseloads



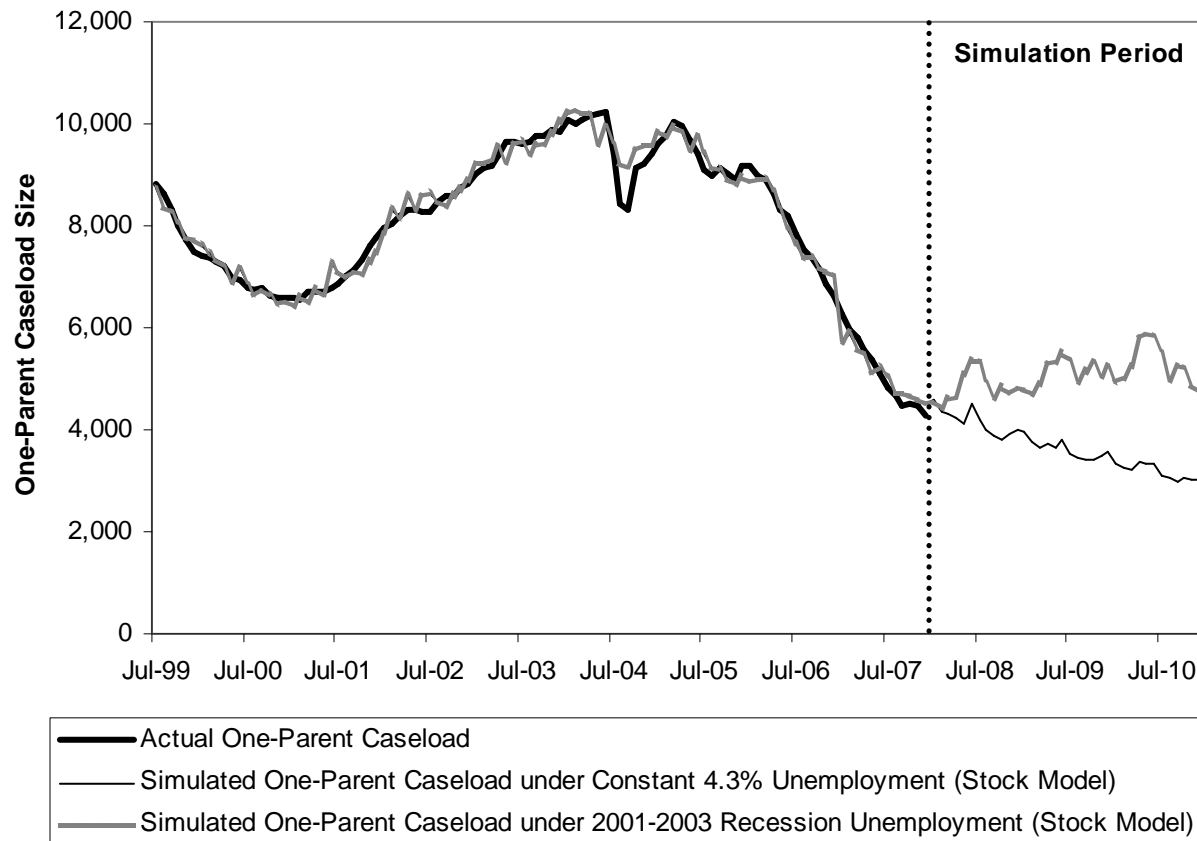
Entry-Exit Models Perform Better than Stock Model in Out-of-Sample Test

Out-of-sample Test of Regression Simulated Caseloads



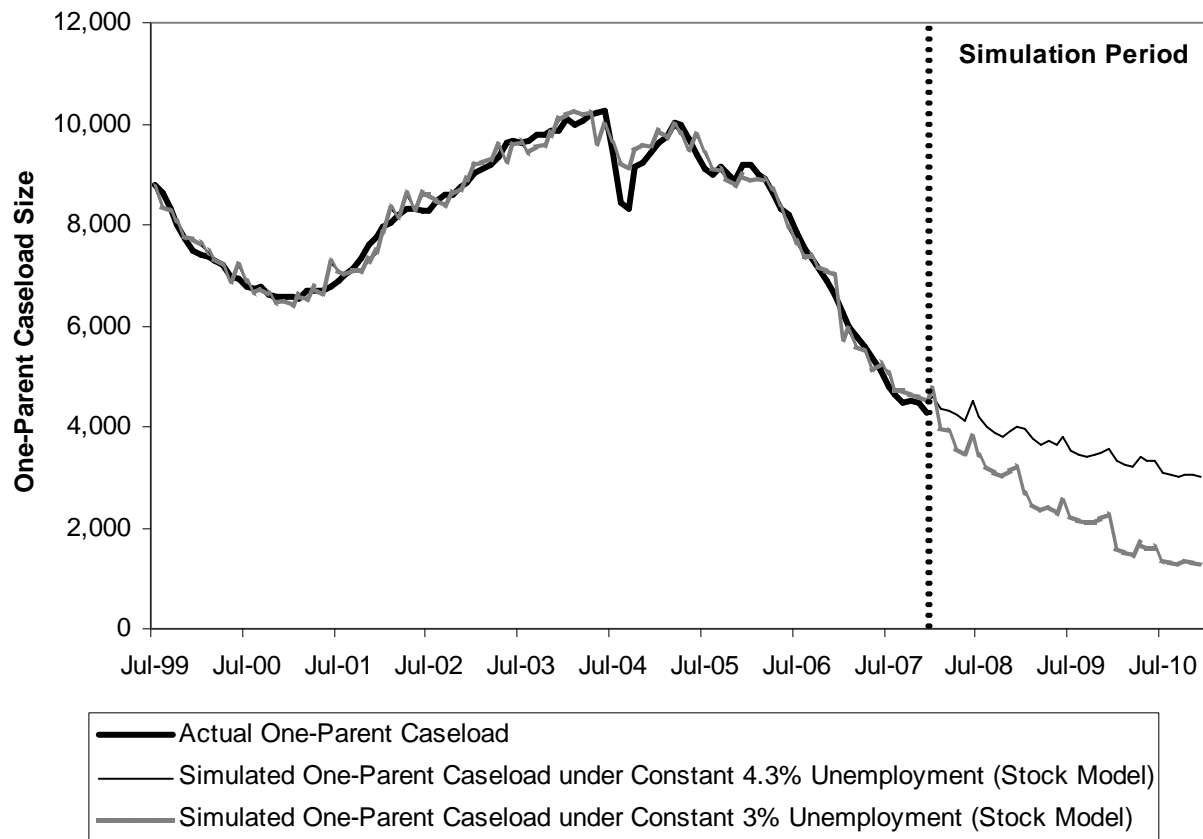
If the Unemployment Rate Rises to 2001-2003 Levels, the One-Parent Caseload is Predicted to Rise by about 1,750 Cases

**Simulated One-Parent Caseload in 2008, 2009, 2010
Assuming 2001-2003 Recession Level Unemployment**



If the Unemployment Rate Falls to 3%, the One-Parent Caseload is Predicted to Fall by about 1,750 Cases

Simulated One-Parent Caseload in 2008, 2009, and 2010 assuming
Unemployment Rates of 3 Percent



Conclusions

- Both stock and entry/exit models fit the Colorado caseload data reasonably well
- Entry/exit models do better at predicting out-of-sample caseload than stock model
- Unemployment rate over prior three years is most important determinant of the caseload for one-parent and two-parent caseloads
- The downward trend beginning in 2005 is not easy to explain: Some may be due to DRA, but policies were implemented by state and counties at varying times
- Data limitations and limited observations preclude estimating all models of interest