

# Higher Education Enrollments & Student Success in Times of Budget Scarcity



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# Outline of the Presentation



- Conventional wisdom about recessions
- Literature review
- Data & methods
- Q1: What is the impact of recessions on CCC headcount?
- Q2: What is the impact on transfer level enrollments?
- Q3: What is the impact on course success in transferable courses?
- Implications – for-profit 4-year universities

# Conventional Wisdom



- The conventional wisdom on CSU & UC budget cuts...
  - They result in increased enrollment pressures at CCC level
    - Producing a surge in CCC enrollment
    - Better student quality at CCC level
    - Better rates of transfer course completion
- We test this conventional wisdom using data from 1992 to 2010

# Literature Review



- Number of studies that see strong correlation between recessions & community college enrollments
  - National economic downturn is correlated with increased demand for higher education (Douglass 2008; Green 2009; Zimmer et al., 2006)
  - Recent studies by Pew and AACC (2009) documented surge in CC enrollments in the current recession
  - Unemployment increases are a key driver of CC demand (Pennington & McGinty 2002)



# Literature Review

- In the CCC system, a Chancellor's Office study in 2005 highlighted major declines in enrollment during the last recession – with negative impacts spread equitably throughout the state
  - 10% drop in unduplicated head count in 2003-04
  - Only 4% drop in FTES same period
  - Increases in full time & award-seeking students as a percentage
- Throughout the 2000's a surge in transfers of CCC students to for-profit, 4-year institutions has been documented as access has been restricted in the UC & CSU system (Perry 2009; van Ommeren 2010)



# Data & Methods

## Data

- CCC enrollment & budget data drawn from CCCCO Data Mart & Fiscal Services Unit
- CSU data drawn from Office of Analytic Studies
- Economic data from EDD Labor Market web sites

## Methods

### OLS Regression

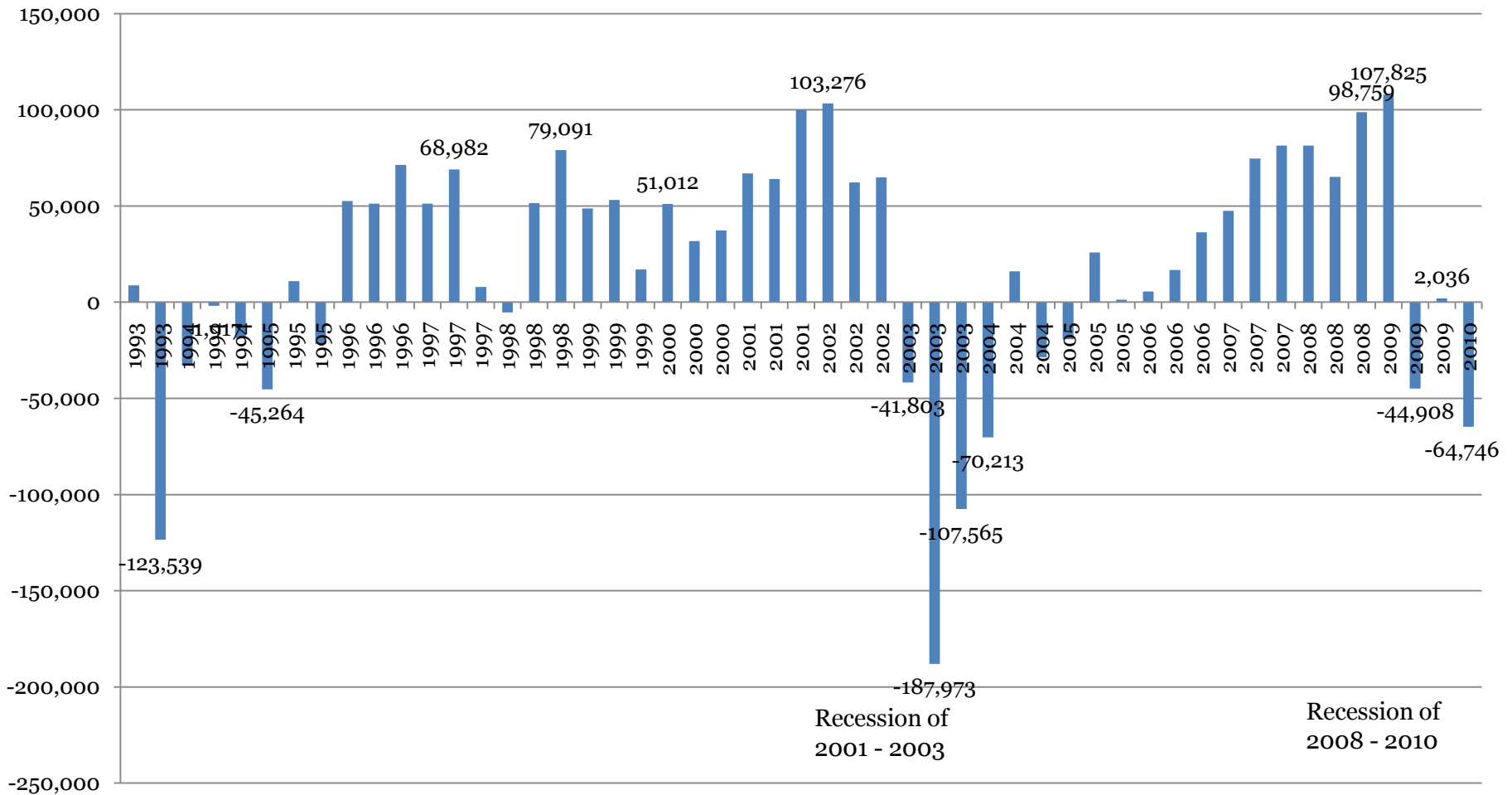
- Concerns about autoregression and correlated error terms
- Can generate biased indicators of statistical significance

### ARIMA Time Series Models

- Attempt to reduce series to “white noise” through suppression of autocorrelation, differencing, and trend or drift
- Examine correlations & partial correlations at various lags to diagnose models



## Changes in Year to Year CCC System Head Count Enrollment, 1993-2010



# Do recessions impact system head count?



**Predicting Fall & Spring Changes in CCC Head Count, 1993-2010**

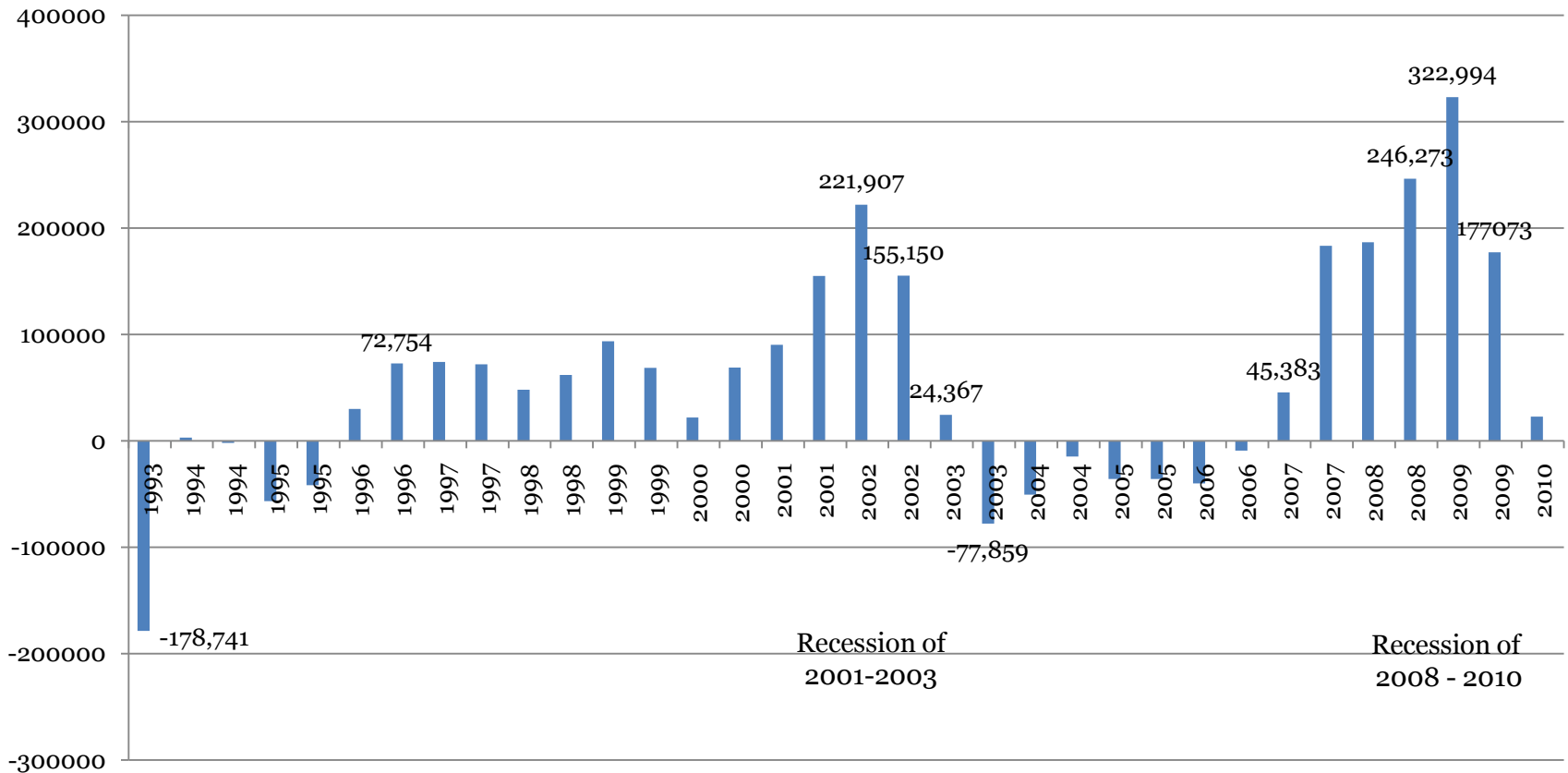
Variable	OLS REGRESSION MODEL				ARIMA (1,0,0) MODEL			
	b	Std. Error	T Test	Signif.	b	Std. Error	T Test	Signif
Change in CCC Funding (million \$)	37.8	47.6	.80	.217	44.8	78.3	.57	.284
Change in Unemployed	.191	.039	4.948	.000	.181	.053	3.45	.001
Change in CSU Head Count	1.936	.655	2.955	.003	1.772	.929	1.91	.029
Recession – 1 year lag	-67,076	22,812	-2.940	.003	-57,676	26,915	-2.14	.016
Constant	-20,609	11,276	-1.828	.078	9,983	23,363	0.43	.335
Lag 1 of Dependent Var.					.222	.238	0.93	.176
N of cases	34				34			
F Test/Wald Chi Square	13.03			.000	44.2			.000
Adjusted R Square	.593							
Durbin Watson (d)	1.570							







## Changes in Transfer Course Enrollments in the CCC System, 1993-2010 (Spring & Fall Terms)



# Do recessions impact transfer enrollments?



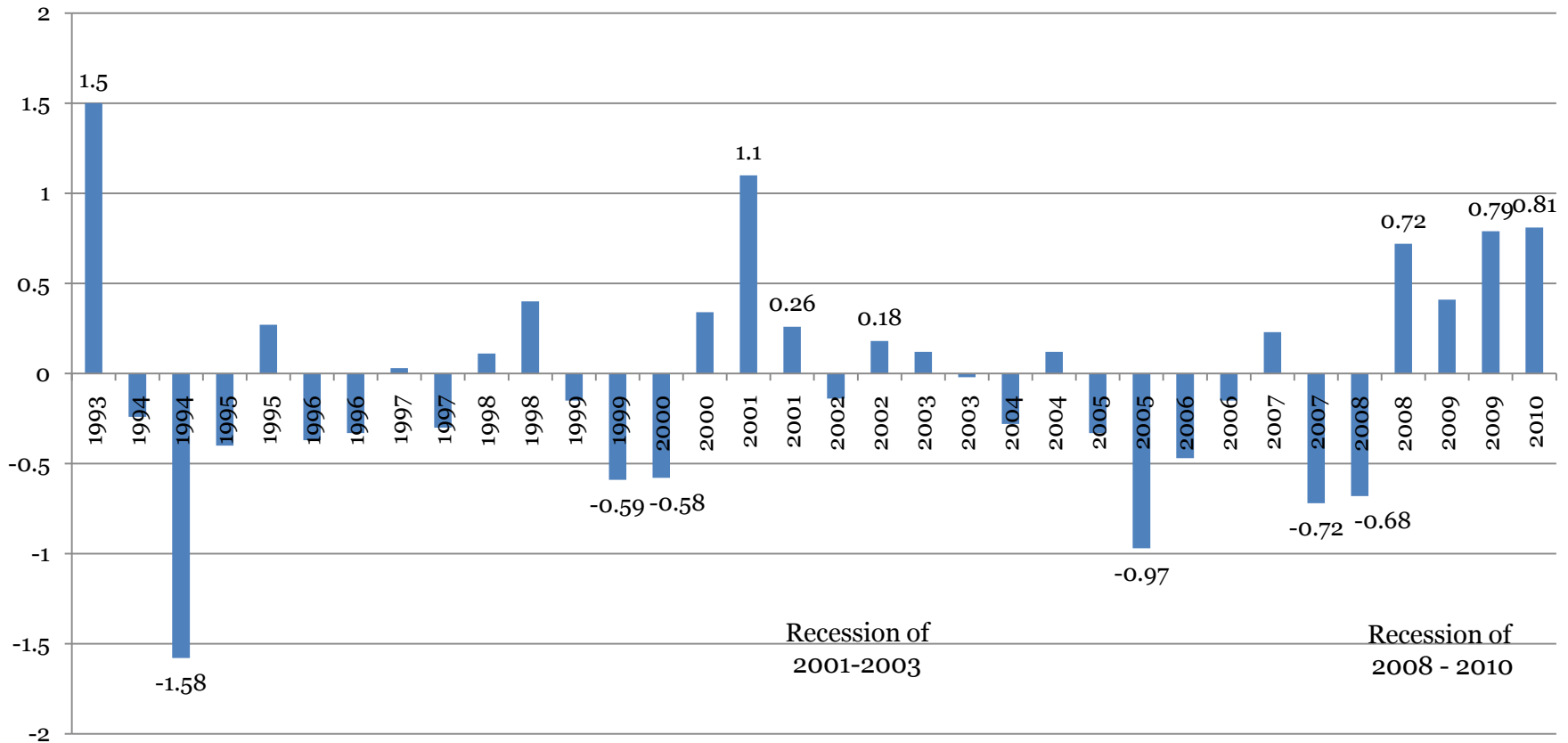
**Predicting Fall & Spring Changes in Transfer Enrollments in the CCC System, 1993-2010**

Variable	OLS REGRESSION MODEL				ARIMA (1,0,0) MODEL			
	b	Std. Error	T Test	Signif.	b	Std. Error	T Test	Signif.
Change in CCC Funding (million \$)	22.3	77.7	0.29	.388	50.0	132.6	0.38	.353
Change in Unemployed	.409	.063	6.49	.000	.376	.102	3.67	.000
Change in CSU Head Count	2.32	1.07	2.17	.020	1.83	1.40	1.31	.100
Recession – 1 Year Lag	-70,739	37,273	-1.90	.034	-44,949	46,098	-0.98	.152
Lag 1 of Dependent Var.					.435	.239	1.82	.034
Constant	44,127	25,326	1.74	.046	54,633	8,492	6.43	.000
N of cases	34				34			
F Test/Wald Chi Square	15.06			.000	69.22			.000
Adjusted R Square	.630							
Durbin Watson (d)	1.208							





## Changes in the Percentage of Students Successfully Completing Transfer Courses in the CCC System 1993-2010 (Spring & Fall Terms)





# Do recessions impact the successful completion rate for transfer courses in the CCC system?

**Predicting Changes in Successful Course Completion in Transfer Courses in the CCC System, 1993-2010**

Variable	OLS REGRESSION MODEL				ARIMA (1,0,0) MODEL			
	b	Std. Error	T Test	Signif.	b	Std. Error	T Test	Signif.
Percentage of Transfer Enrollments	-.214	.168	-1.28	.106	-.196	.223	-0.88	.190
Change in CCC Funding (billion \$)	1.38	.632	2.18	.019	1.32	.578	2.30	.011
Change in Unemployed (in thousands)	.001	.000	2.47	.010	.001	.000	1.68	.047
Change in CSU Head Count (in thousands)	-.022	.000	-2.47	.010	-.022	.000	-2.31	.011
Recession – 1 Year Lag	.688	.307	2.24	.016	.681	.318	2.14	.016
Lag 1 of Dependent Var.					.072	.199	0.36	.196
Constant	15.99	12.83	1.25	.112	.464	.071	6.51	.000
N of cases	34				34			
F Test/Wald Chi Square	3.66			.011	22.26			.001
Adjusted R Square	.288							
Durbin Watson (d)	1.75							





# Conclusion & Implications

- Part of the conventional wisdom about recessions and their impact on the CCC system is correct
  - Negative impact on system enrollment 😞
  - Positive impact on transfer course success patterns 😊
- A growing concern is the decline in access of CCC transfers to the UC and CSU system & increasing market share in the for-profit 4-year sector – Raises equity concerns 😞
  - African American women are 3 times more likely to transfer from a CCC to a for-profit than white women (30% vs. 10%)
  - African American men vs. white men (19% vs. 9%)
  - Hispanic rates are also higher (see van Ommeren 2010, 57)



## Conclusion & Implications

- Financial impact on students – debt loads
- Profit-taking by CEOs & use of federal financial aid to generate profits
- Peter Sperling, Apollo Group/Phoenix's Vice Chancellor, made \$574 million in stock sales between 2003-2010

*“The University of Phoenix exists only where the CCC and CSU have failed: we don’t offer full programs online (or very few), we do not offer a viable CCC to CSU undergraduate transfer online, we make our transition points incredibly difficult, we don’t offer accelerated learning, we don’t offer much flexibility for working adults, we don’t offer adequate guidance or technological support. Lately we don’t offer courses you can get into...”*  
*(Perry 2009)*

# Questions & Answers



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