

# Does State Fiscal Relief During Recessions Increase Employment?

## Evidence from the American Recovery and Reinvestment Act

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### WEB APPENDIX

ONLINE APPENDIX TABLE 1—AVERAGE MAGNITUDE OF CHANGE IN S&L EMPLOYMENT

	1955-2011		1990-2007	
	Absolute value	Squared	Absolute value	Squared
month==1	-0.12***	-0.11***	-0.10***	-0.06***
	-0.04	-0.04	-0.04	-0.02
month==2	-0.12***	-0.10***	-0.14***	-0.07***
	-0.04	-0.04	-0.04	-0.02
month==3	-0.14***	-0.12***	-0.10***	-0.06***
	-0.04	-0.04	-0.04	-0.02
month==4	-0.13***	-0.13***	-0.12***	-0.07***
	-0.04	-0.04	-0.04	-0.02
month==5	-0.09**	-0.07*	-0.12***	-0.06***
	-0.04	-0.04	-0.04	-0.02
month==6	-0.11***	-0.11***	-0.08**	-0.04***
	-0.04	-0.04	-0.04	-0.02
month==8	-0.07*	-0.08**	-0.06*	-0.04**
	-0.04	-0.04	-0.04	-0.02
month==9	-0.02	-0.04	-0.04	-0.03*
	-0.04	-0.04	-0.04	-0.02
month==10	-0.05	-0.04	-0.11***	-0.06***
	-0.04	-0.04	-0.04	-0.02
month==11	-0.11***	-0.11***	-0.11***	-0.06***
	-0.04	-0.04	-0.04	-0.02
month==12	-0.10***	-0.09**	-0.13***	-0.07***
	-0.04	-0.04	-0.04	-0.02
Constant	0.35***	0.20***	0.25***	0.09***
	-0.03	-0.03	-0.03	-0.01
Observations	676	676	216	216

*Notes:* The outcome variable for each regression is the seasonally adjusted change in total non-farm employment per individual 16+ in a state, from December 2008 to July 2009. The main variable of interest is total ARRA FMAP payouts through June 30, 2010. In addition to the preferred controls listed in every specification, Specifications (2)-(5) each include an additional control. Specification (2) includes the maximum weekly benefit amount of unemployment insurance benefits as of January 2008. When two values are reported for a state, we take the average. Specification (3) includes FHFA house price appreciation from 1999Q4 to 2004Q4. Specification (4) includes a dummy as to whether there was a Democratic governor (or mayor in D.C.) as of February 1, 2009. Specification (5) includes dummies representing the stringency of the state balanced budget rules as used in Clemens and Miran (2010). See text and data appendix for sources. Robust standard errors are in parentheses.

\*\*\* Significant at the 1 percent level.

\*\* Significant at the 5 percent level.

\* Significant at the 10 percent level.

ONLINE APPENDIX TABLE 2— ADDED CONTROLS FOR TOTAL EMPLOYMENT

	(1)	(2)	(3)	(4)	(5)
Total FMAP payout per person 16+ (\$100,000)	2.83*** (1.01)	2.49** (0.97)	2.68*** (0.95)	2.22** (0.95)	3.05*** (1.01)
Vote share Kerry (2004), percent/10,000	1.14 (1.14)	1.45 (1.21)	1.44 (1.33)	2.34 (1.46)	0.91 (1.22)
Union share, percent/10,000	-4.29** (2.01)	-3.95* (2.05)	-4.26** (2.00)	-3.95** (1.97)	-4.38** (2.15)
GDP per person 16+ (\$1,000,000)	-0.04 (0.05)	-0.04 (0.05)	-0.03 (0.05)	-0.06 (0.06)	-0.03 (0.06)
Employment in manufacturing, percent/10,000	-6.83*** (2.12)	-6.29*** (2.13)	-7.93*** (2.85)	-5.61*** (2.10)	-7.20*** (2.20)
State population 16+, billions	-0.36*** (0.08)	-0.36*** (0.07)	-0.34*** (0.08)	-0.39*** (0.08)	-0.38*** (0.08)
Lagged total employment ch. May 2008 to Dec 2008	0.37** (0.17)	0.39** (0.17)	0.33 (0.21)	0.48*** (0.15)	0.36** (0.18)
UI Generosity		X			
House price appreciation			X		
Democratic Governor in 2009				X	
State budget rule dummies					X
Region fixed effects?	X	X	X	X	X
Observations	51	51	51	51	51

*Notes:* The outcome variable for each regression is the seasonally adjusted change in total non-farm employment per individual 16+ in a state, from December 2008 to July 2009. The main variable of interest is total ARRA FMAP payouts through June 30, 2010. In addition to the preferred controls listed in every specification, Specifications (2)-(5) each include an additional control. Specification (2) includes the maximum weekly benefit amount of unemployment insurance benefits as of January 2008. When two values are reported for a state, we take the average. Specification (3) includes FHFA house price appreciation from 1999Q4 to 2004Q4. Specification (4) includes a dummy as to whether there was a Democratic governor (or mayor in D.C.) as of February 1, 2009. Specification (5) includes dummies representing the stringency of the state balanced budget rules as used in Clemens and Miran (2010). Robust standard errors are in parentheses.

*Source:* See text and data appendix.

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\* Significant at the 10 percent level.

ONLINE APPENDIX TABLE 3— ADDED CONTROLS FOR GOVERNMENT, HEALTH, EDUCATION EMPLOYMENT

	(1)	(2)	(3)	(4)	(5)
Total FMAP payout per person 16+ (\$100,000)	1.17*** (0.36)	1.26*** (0.40)	0.86*** (0.30)	1.22*** (0.33)	1.29*** (0.36)
Vote share Kerry (2004), percent/10,000	-1.01*** (0.32)	-1.10*** (0.36)	-0.58** (0.25)	-1.30*** (0.42)	-1.12*** (0.35)
Union share, percent/10,000	-0.26 (0.80)	-0.36 (0.81)	-0.16 (0.70)	-0.3 (0.73)	-0.24 (0.86)
GDP per person 16+ (\$1,000,000)	0.06*** (0.02)	0.06*** (0.02)	0.07*** (0.02)	0.07*** (0.02)	0.07*** (0.02)
Employment in manufacturing, percent/10,000	-1.77** (0.88)	-1.92** (0.93)	-2.67*** (0.82)	-1.95** (0.81)	-1.98** (0.86)
State population 16+, billions	-0.11*** (0.03)	-0.11*** (0.03)	-0.08** (0.03)	-0.10*** (0.03)	-0.11*** (0.04)
Lagged total employment change May 2008 to Dec 2008	0.14 (0.17)	0.13 (0.18)	0.03 (0.16)	0.03 (0.21)	0.16 (0.20)
UI Generosity		X			
House price appreciation			X		
Democratic Governor in 2009				X	
State budget rule dummies					X
Region fixed effects?	X	X	X	X	X
Observations	51	51	51	51	51

*Notes:* The outcome variable for each regression is the seasonally adjusted change in state and local government, health, and education employment per individual 16+ in a state, from December 2008 to July 2009. The main variable of interest is total ARRA FMAP payouts through June 30, 2010. In addition to the preferred controls listed in every specification, Specifications (2)-(5) each include an additional control. Specification (2) includes the maximum weekly benefit amount of unemployment insurance benefits as of January 2008. When two values are reported for a state, we take the average. Specification (3) includes FHFA house price appreciation from 1999Q4 to 2004Q4. Specification (4) includes a dummy as to whether there was a Democratic governor (or mayor in D.C.) as of February 1, 2009. Specification (5) includes dummies representing the stringency of the state balanced budget rules as used in Clemens and Miran (2010)

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