



# **Weathering the Great Recession: The Returns to Education in Arkansas**

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# Great Recession and Returns to Education

- **Great Recession GR (12/2007-6/2009):**
  - Unemployment doubled (construction, males, long-term)
  - Long duration and after-effects
  - Productivity increased; wages flat
- **Education-earnings premiums go up in recessions?**
  - Easier job search; counter-cyclical sectors; displace low educated; wait out recession
  - *But* compressed wages; length of GR; tech-boom over
  - *Confounders*: lower lifetime earnings from graduating in a recession; and expansion of for-profit colleges

# Evidence from Arkansas

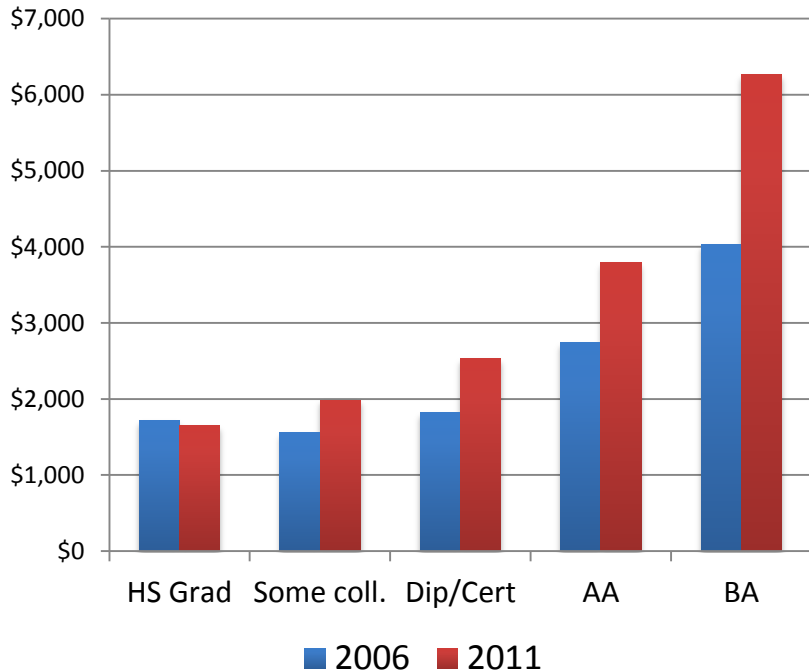
- **AR labor market:**
  - 1.9m workers; \$41,000 median HH income; 8% unemp. rate
- **Dataset:**
  - Arkansas Research Center
  - High school / college cohorts with UI records in AR in 2000s
  - Quarterly earnings and NAICS for 2001Q1-2012Q4
  - Matched to highest education (dropout to advanced degree)
  - Limited covariates

# Empirical Approach

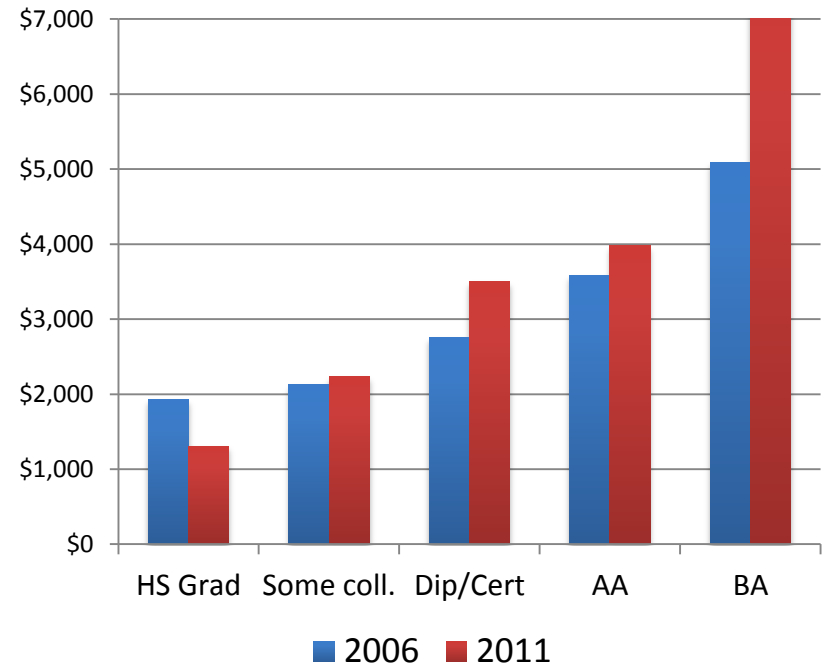
- Estimate returns to education before/after GR
- Methods:
  1. Mincerian estimations (cross-sections ages 18-32)
  2. Fixed effects models
  3. Longitudinal profiles
  4. Cohorts in labor market pre- and post-GR

# Quarterly Earnings Gain over HS Dropout

Female



Male



# Quarterly Earnings Gains: Fixed Effects

	Female Coeff. [SE]	Male Coeff. [SE]
In college	-220 [8]	-422 [11]
Experience (cumul. qtrs)	149 [1]	207 [1]
Diploma/Certificate	71 [23]	-344 [31]
Associate degree	937 [25]	260 [42]
Bachelor degree	2,656 [23]	2,789 [34]
Higher degree	3,198 [40]	3,809 [74]
R-squared	0.312	0.311
<i>Individuals</i>	<i>239,189</i>	<i>181,128</i>

Notes: Earnings data from 2001Q1 to 2012Q3. Award status identified for each quarter award is held. Quarterly wages in constant 2010 dollars (CPI). Model also includes experience squared and constant term. Robust standard errors in brackets. All coefficients statistically significant at  $p < 0.01$ .

	During GR			
	Female		Male	
Dip/cert.	41 <sup>ns</sup>	[23]	-369	[31]
Dip/cert. * GR	186	[19]	150	[25]
AA	904	[25]	214	[42]
AA * GR	212	[19]	311	[33]
BA	2,616	[23]	2,756	[34]
BA * GR	242	[18]	204	[26]
Dip/cert. awarded in GR				
AA awarded in GR				
BA awarded in GR				
R-squared	0.312		0.311	
<i>Individuals</i>	239,189		181,128	

Notes: Earnings data from 2001Q1 to 2012Q3. Quarterly wages in constant 2010 dollars (CPI). Fixed effects specification. Model includes exp, exp2, adv. degree, in college.

	During GR				Entering Labor Market in GR			
	Female		Male		Female		Male	
Dip/cert.	41 <sup>ns</sup>	[23]	-369	[31]	88	[23]	-324	[31]
Dip/cert. * GR	186	[19]	150	[25]				
AA	904	[25]	214	[42]	966	[25]	286	[43]
AA * GR	212	[19]	311	[33]				
BA	2,616	[23]	2,756	[34]	2,724	[23]	3,821	[74]
BA * GR	242	[18]	204	[26]				
Dip/cert. awarded in GR					-192	[38]	-222	[53]
AA awarded in GR					-412	[42]	-361	[74]
BA awarded in GR					-1,058	[40]	-1,230	[60]
R-squared	0.312		0.311		0.312		0.311	
<i>Individuals</i>	239,189		181,128		239,189		181,128	

Notes: Earnings data from 2001Q1 to 2012Q3. Quarterly wages in constant 2010 dollars (CPI). Fixed effects specification. Model includes exp, exp2, adv. degree, in college.



Figure 5M  
 Employment Rate by Education [Male]

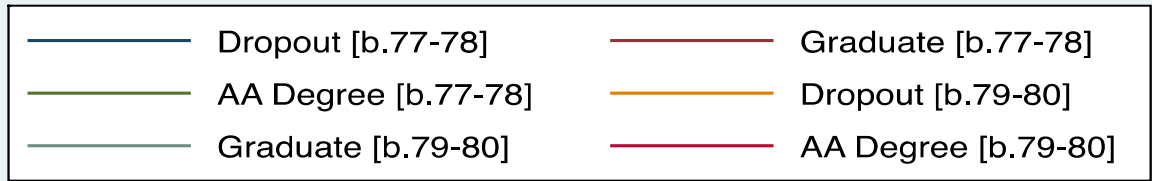
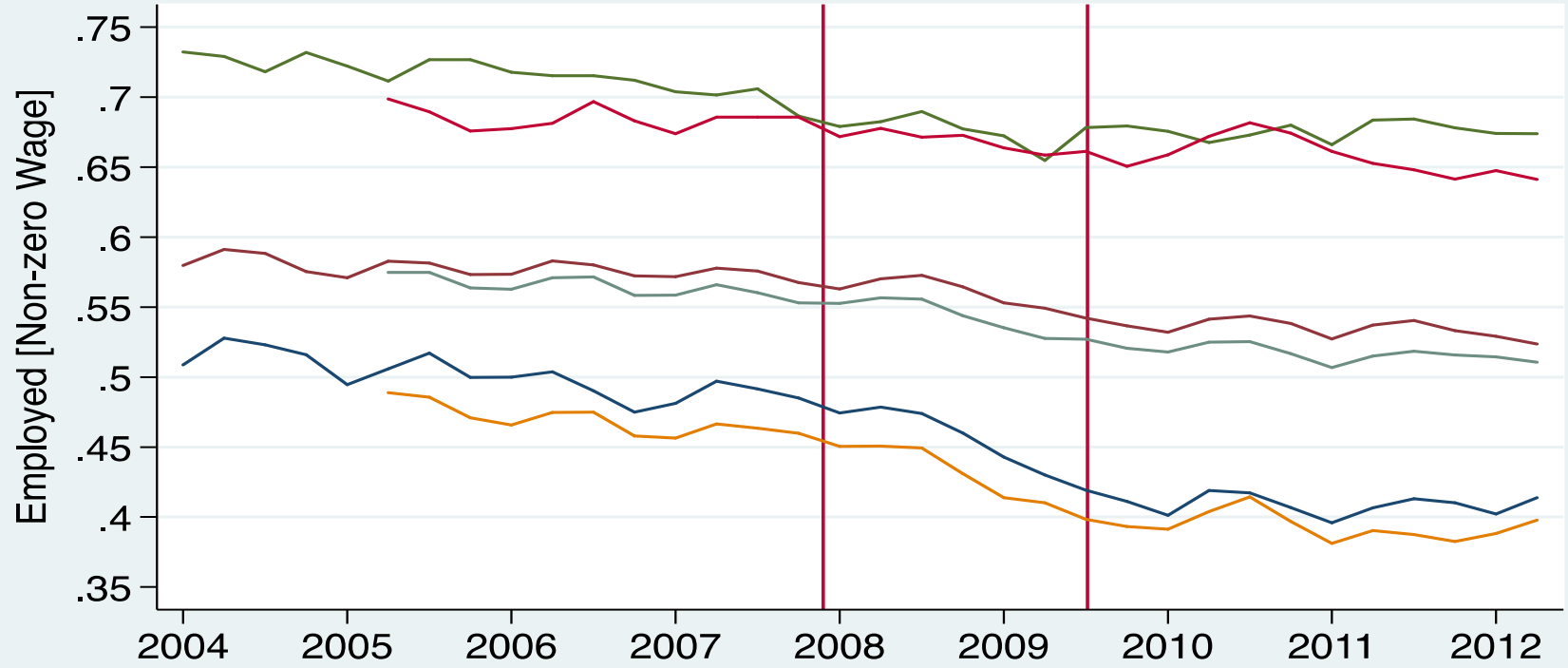
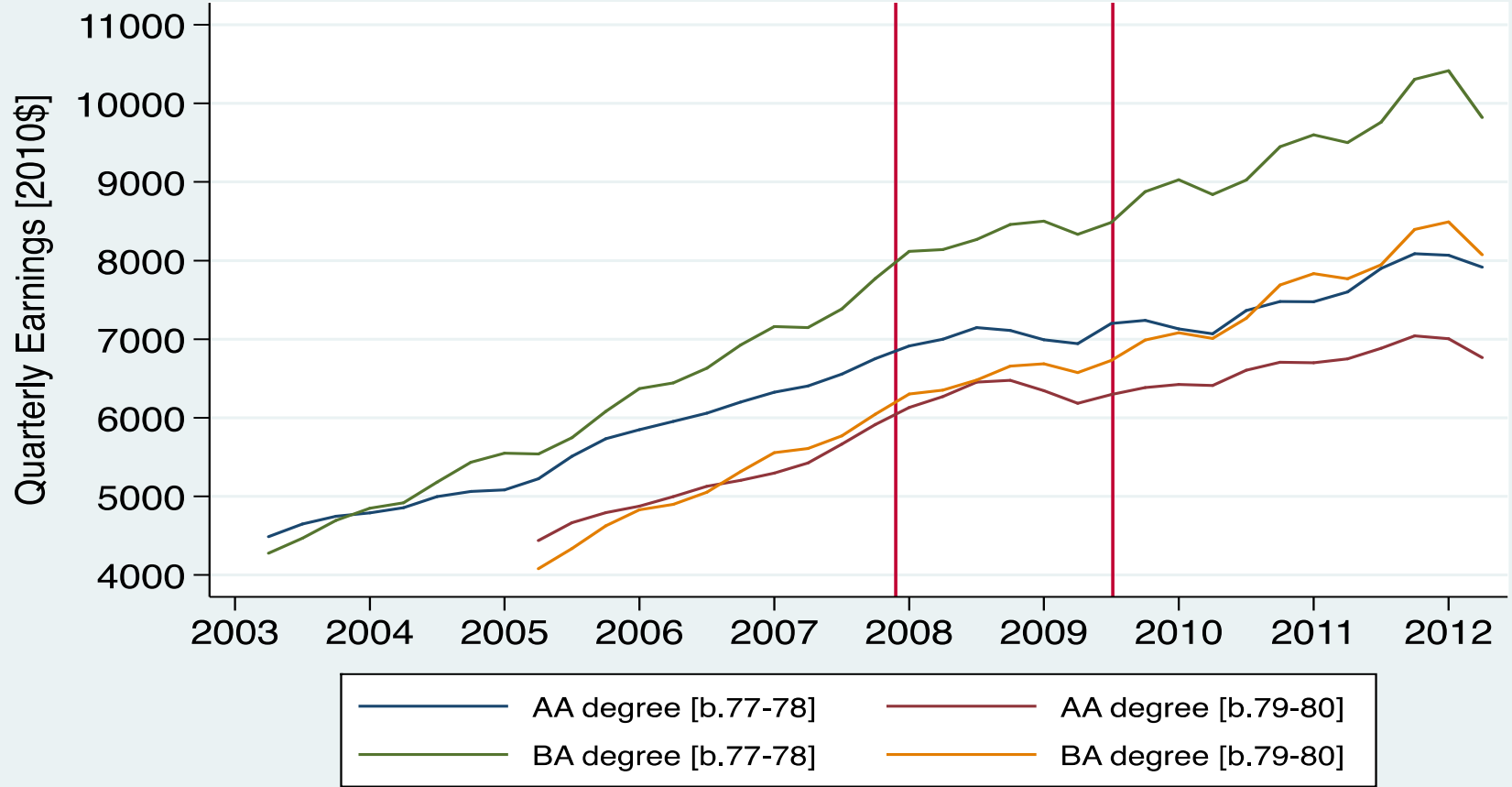
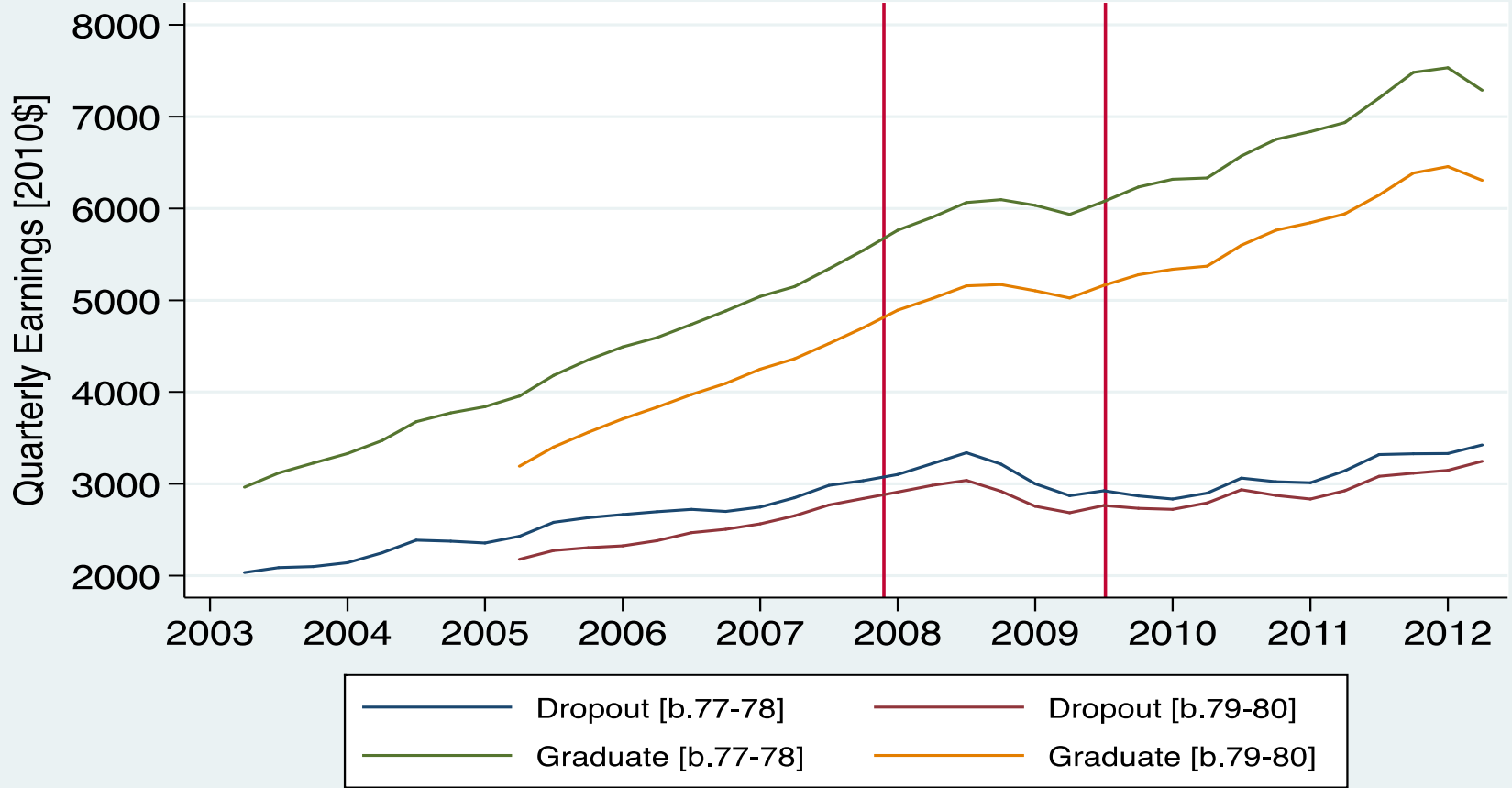


Figure 6M  
Mean Earnings for College Degrees [Male]



Notes: Includes persons with zero earnings. Lowess smoothing, bandwidth(0.15, 0.2).

Figure 7M  
Mean Earnings for Non-College Group [Male]



Notes: Includes persons with zero earnings. Lowess smoothing, bandwidth(0.15, 0.2).

# Conclusions

- GR greatest labor market shock since Depression:
  - Same as prior recessions: hardest on low-skilled
  - Impact on employment; modest wage growth for college-educated
  - Graduating in recession has adverse impact even for college-educated workers
- During recessions:
  - Promote college enrollment
  - Ease labor market transitions

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