High Discounts and High Unemployment

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The rise in discounts is easily enough to explain observed large variations in unemployment, even with Nash wage bargaining

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Existing research on discounts and unemployment volatility

- Discount volatility in the stock market: Campbell-Shiller (1988), Cochrane (2011)
- CAPM expected returns as discounts in the PV of the employer's share of surplus: Yashiv (2000)
- Labor market amplification of productivity shocks as a source of discount vol: Kuehn, Petrosky-Nadeau, and Zhang (2013)
- Joint movements of job value and stock market assuming corps own only plant, equipment, and employment relationships: Merz and Yashiv (2007)

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Key new ideas

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Capture the high cyclical volatility of discounts

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Zero-profit condition

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$$cT = J$$

$$J = \mathbb{V}(x - w)$$

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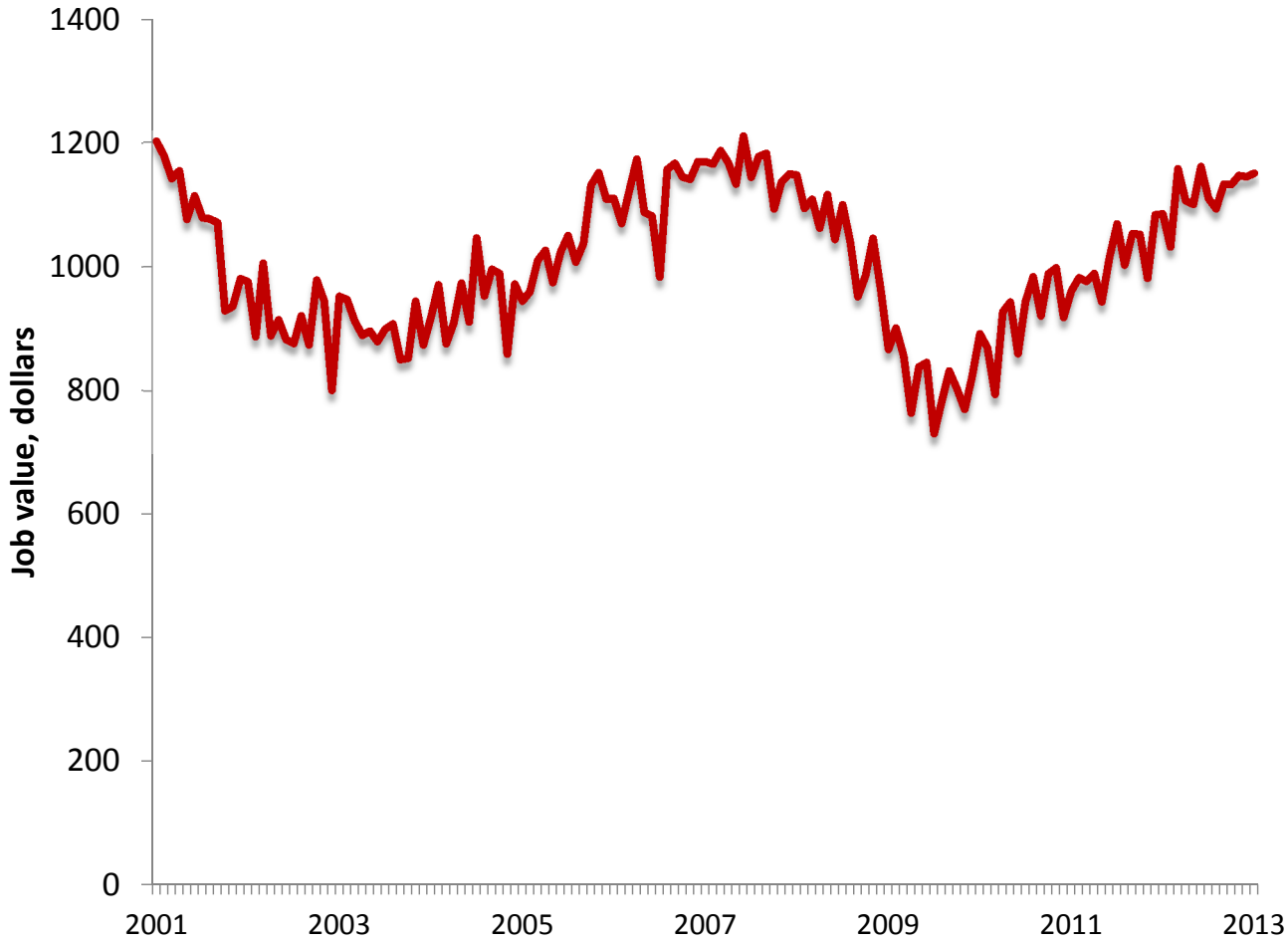
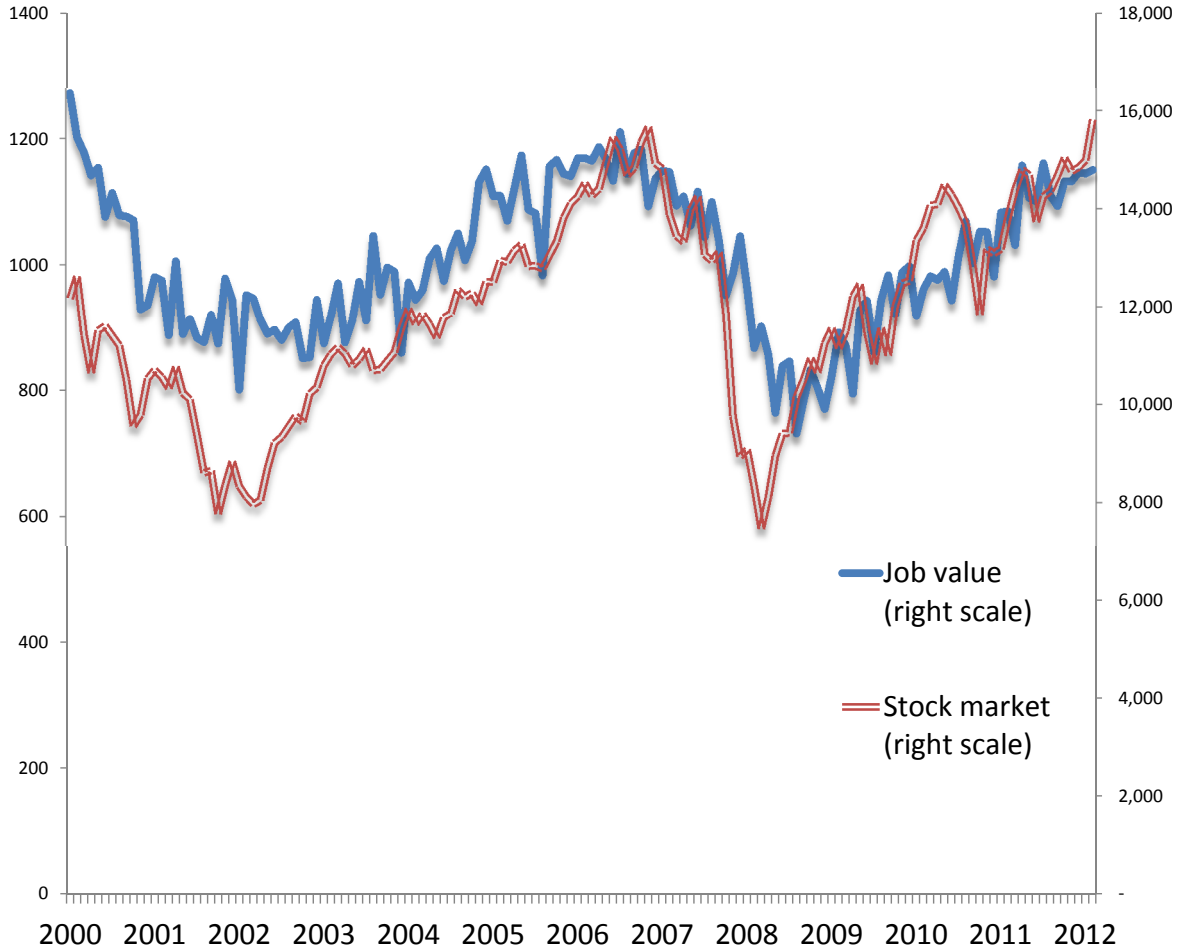
Aggregate Job Value, 2001 through 2013



Job Value from JOLTS and Wilshire Stock-Market Index



Stock-market pricing model

$$1 = \sum_{i'} \pi_{i,i'} m_{i,i'} \frac{P_{i'} + y_{i'}}{P_i}$$

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Bayesian regression with very slightly informative prior centered on 1

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Definitions of Categories of the Stock Price and Corporate Profits

	Deflated detrended Wilshire stock-market index	*Deflated detrended corporate profits, billions of 2005 dollars*
L	1450	92
M	2411	130
H	3619	153

Stochastic Discount Factor Inferred from the Stock Market

			Destination								
			1	2	3	4	5	6	7	8	9
		P	L	L	L	M	M	M	H	H	H
Origin	*P*	*y*	L	M	H	L	M	H	L	M	H
1	L	L	0.87	0.98		0.95					
2	L	M	0.98	0.91	0.99		0.99				
3	L	H		0.99	0.94						
4	M	L	0.99			0.94	0.99		0.99		
5	M	M		0.99		0.98	0.92	0.97			0.99
6	M	H					0.97	0.79		0.90	0.93
7	H	L				1.01			1.03	1.01	
8	H	M					1.00		1.01	1.04	1.00
9	H	H						1.00		0.99	0.95

Present value

$$V_i = \mathbb{E}_{i'|i}\, m_{i,i'} y_{i'}$$

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Discount factors and rates

$$V_i = D_i \bar{y}_i$$

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$$d_i = \frac{1}{D_i} - 1.$$

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Discount Factors and Rates

State	*P category*	*y category*	*Quarterly discount factor*	*Annual discount rate, percent*
1	L	L	0.89	47
2	L	M	0.93	28
3	L	H	0.95	21
4	M	L	0.96	18
5	M	M	0.94	24
6	M	H	0.85	72
7	H	L	1.02	-9
8	H	M	1.03	-11
9	H	H	0.95	19
Mean			0.95	24

Discounting job-value flows

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$$\alpha = \$661 \ (\$87)$$

$$\gamma = 1.305 \ (0.375)$$

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Actual and Fitted Job Values

State	*P category*	*y category*	*Actual job value*	*Fitted job value*
1	L	L	876	881
2	L	M	906	913
3	L	H	907	953
4	M	L	885	929
5	M	M	946	938
6	M	H	1004	938
7	H	L	1011	1023
8	H	M	1023	1053
9	H	H	1069	1001

Research in progress

What fraction of the observed cyclical volatility of unemployment do variations in J account for?

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Requires understanding of the decline in matching efficiency that started in 2009

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