Are variations in term premia related to the macroeconomy?
Additional tables

Estimates of standard macro-finance model for 1961 through 2005

The joint dynamics of inflation π_t, output growth Δg_t, and the short rate r_t are described by the model of Section 3.3. The model is estimated with maximum likelihood over the period 1961Q2 through 2005Q4, using these data as well as yields on zero-coupon bonds with maturities of one, two, three, five, and seven years. Standard errors are in parentheses.

Panel A. Macro factor dynamics

	Uncon mean	K_f π_{t-1}	Δg_{t-1}	r_{t-1}	$\Sigma_f \times 10^3$ π_t	Δg_t	r_t	Std dev of obs error $\times 10^2$
π_t	0.0375	0.711	0.184	0.144	6.323			1.885
	(–)	(0.404)	(0.302)	(0.214)	(1.175)			(0.101)
Δg_t	0.0337	0.001	0.403	−0.102	−2.852	3.072		3.283
	(–)	(0.750)	(0.146)	(0.400)	(2.190)	(2.805)		(0.187)
r_t	0.0573	−0.314	0.330	1.162	10.503	−0.727	1.214	0
	(–)	(0.716)	(0.533)	(0.545)	(2.486)	(0.911)	(6.011)	(–)

Panel B. Price of macro risk

	λ_{0f}	λ_{1f} π_t	Δg_t	r_t
π_t	0.026	0.044	−0.556	−0.190
	(0.026)	(0.835)	(0.567)	(0.475)
Δg_t	−0.015	0.024	0.303	0.101
	(0.014)	(0.579)	(0.280)	(0.300)
r_t	0.046	0.156	−1.019	−0.381
	(0.047)	(1.515)	(1.010)	(0.857)

Estimates of a general null model for 1961 through 2005

The joint dynamics of inflation π_t, output growth Δg_t, and the short rate r_t are described by the model of Section 3.3. The model is estimated with maximum likelihood over the period 1961Q2 through 2005Q4, using these data as well as yields on zero-coupon bonds with maturities of one, two, three, five, and seven years. Standard errors are in parentheses.

Panel A. Macro factor dynamics

	Uncon mean	K_f π_{t-1}	Δg_{t-1}	r_{t-1}	$\Sigma_f \times 10^3$ π_t	Δg_t	r_t	Std dev of obs error $\times 10^2$
π_t	0.0375	0.902	−0.227	0.024	6.362			0.708
	(–)	(0.293)	(0.757)	(0.034)	(0.761)			(0.060)
Δg_t	0.0337	−0.214	0.433	−0.003	−2.422	1.441		3.243
	(–)	(0.226)	(0.469)	(0.075)	(0.902)	(3.012)		(0.176)
r_t	0.0573	−1.093	−2.892	0.962	2.651	4.538	9.802	0
	(–)	(2.517)	(6.235)	(0.420)	(2.011)	(9.983)	(4.554)	(–)

Panel B. Price of macro risk

	λ_{0f}
π_t	−0.002
	(0.001)
Δg_t	−0.000
	(0.002)
r_t	−0.006
	(0.005)

Panel C. Term premia factor dynamics

	K_ω ω_{1t-1}	ω_{2t-1}	ω_{3t-1}	$\Sigma_\omega \times 10^3$ ω_{1t}	ω_{2t}	ω_{3t}
ω_{1t}	1.101	−0.472	−0.033	0.919		
	(2.219)	(3.149)	(0.639)	(1.881)		
ω_{2t}	0.203	0.539	−0.059	0.282	0.378	
	(1.819)	(1.117)	(0.490)	(1.832)	(1.624)	
ω_{3t}	0.712	−1.650	0.778	1.974	0.769	0.416
	(6.697)	(7.016)	(1.934)	(1.810)	(4.548)	(0.491)

Estimates of standard macro-finance model for 1985 through 2005

The joint dynamics of inflation π_t, output growth Δg_t, and the short rate r_t are described by the model of Section 3.3. The model is estimated with maximum likelihood over the period 1985Q1 through 2005Q4, using these data as well as yields on zero-coupon bonds with maturities of one, two, three, five, seven, and ten years. Standard errors are in parentheses.

Panel A. Macro factor dynamics

	Uncon mean	K_f π_{t-1}	Δg_{t-1}	r_{t-1}	$\Sigma_f \times 10^3$ π_t	Δg_t	r_t	Std dev of obs error $\times 10^2$
π_t	0.0241	0.807	0.047	0.034	0.825			0.846
	(–)	(0.333)	(0.029)	(0.064)	(0.266)			(0.103)
Δg_t	0.0307	1.527	0.724	−0.313	−1.406	6.921		1.797
	(–)	(2.734)	(0.315)	(0.512)	(9.310)	(3.177)		(0.173)
r_t	0.0475	−0.246	0.232	1.003	3.664	2.180	2.077	0
	(–)	(1.156)	(0.130)	(0.216)	(3.222)	(4.928)	(3.446)	(–)

Panel B. Price of macro risk

	λ_{0f}	λ_{1f} π_t	Δg_t	r_t
π_t	0.002	−0.062	−0.048	−0.008
	(0.005)	(0.288)	(0.045)	(0.050)
Δg_t	−0.003	−0.151	0.199	0.123
	(0.027)	(1.516)	(0.161)	(0.277)
r_t	0.012	−0.494	−0.140	0.007
	(0.020)	(1.093)	(0.140)	(0.203)

Estimates of a general null model for 1985 through 2005

The joint dynamics of inflation π_t, output growth Δg_t, and the short rate r_t are described by the model of Section 3.3. The model is estimated with maximum likelihood over the period 1985Q1 through 2005Q4, using these data as well as yields on zero-coupon bonds with maturities of one, two, three, five, seven, and ten years. Standard errors are in parentheses.

Panel A. Macro factor dynamics

	Uncon mean	K_f π_{t-1}	Δg_{t-1}	r_{t-1}	$\Sigma_f \times 10^3$ π_t	Δg_t	r_t	Std dev of obs error $\times 10^2$
π_t	0.0241	0.180	0.001	0.127	3.556			0.927
	(–)	(0.488)	(0.201)	(0.064)	(1.818)			(0.120)
Δg_t	0.0307	1.193	0.735	−0.240	−5.684	4.462		1.784
	(–)	(1.179)	(0.469)	(0.173)	(4.336)	(4.174)		(0.182)
r_t	0.0475	−0.114	0.401	1.045	−0.002	1.173	4.711	0
	(–)	(0.539)	(0.244)	(0.076)	(1.231)	(1.317)	(0.717)	(–)

Panel B. Price of macro risk

	λ_{0f}
π_t	−0.004
	(0.003)
Δg_t	0.008
	(0.010)
r_t	−0.007
	(0.017)

Panel C. Term premia factor dynamics

	K_ω ω_{1t-1}	ω_{2t-1}	ω_{3t-1}	$\Sigma_\omega \times 10^3$ ω_{1t}	ω_{2t}	ω_{3t}
ω_{1t}	0.910	−0.052	−0.014	0.178		
	(0.200)	(0.187)	(0.115)	(0.258)		
ω_{2t}	0.074	0.880	−0.079	−0.098	0.538	
	(0.341)	(0.229)	(0.196)	(1.413)	(0.819)	
ω_{3t}	0.096	−0.002	0.981	0.030	−0.577	0.628
	(0.294)	(0.253)	(0.122)	(1.493)	(0.808)	(0.420)