Multiple Structural Breaks in Vector Error Correction Models – Supplementary Material

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1 Additional simulation results

Table S1: Case 1 (no short-run dynamics, correlated innovations)

	SB1: ($\tau = 0.5$)				
T	*pce*	τ			
100	95.5	0.503 (0.044)			
200	97.7	0.505 (0.032)			
400	98.0	0.503 (0.023)			
	SB2: ($\tau_1 = 0.33$, $\tau_2 = 0.67$)				
T	*pce*	τ_1	τ_2		
150	81.1	0.332 (0.049)	0.661 (0.033)		
300	87.0	0.340 (0.037)	0.663 (0.021)		
600	92.0	0.341 (0.036)	0.666 (0.014)		
	SB4: ($\tau_1 = 0.2$, $\tau_2 = 0.4$, $\tau_3 = 0.6$, $\tau_4 = 0.8$)				
T	*pce*	τ_1	τ_2	τ_3	τ_4
250	51.2	0.229 (0.062)	0.408 (0.060)	0.610 (0.048)	0.790 (0.036)
500	65.1	0.219 (0.048)	0.400 (0.042)	0.607 (0.028)	0.796 (0.018)
1000	70.5	0.218 (0.045)	0.397 (0.037)	0.609 (0.026)	0.796 (0.015)

Note: We use 1,000 replications of the data-generating process. *pce* denotes the percentages of correct estimation of the number of breaks m. The variance of the error terms is $\sigma_u^2 = 1$ and their correlation is 0.5. The first panel reports the results for one active breakpoint at $\tau = 0.5$, the second panel considers two active breakpoints at $\tau_1 = 0.33$ and $\tau_2 = 0.67$ and the third panel has four active breakpoints at $\tau_1 = 0.2$, $\tau_2 = 0.4$, $\tau_3 = 0.6$, and $\tau_4 = 0.8$. Standard deviations are given in parentheses.

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Table S2: Case 2 (no short-run dynamics, correlated innovations)

	SB1: ($\tau = 0.5$)				
T	*pce*	τ			
100	86.6	0.498 (0.068)			
200	92.2	0.504 (0.038)			
400	95.0	0.505 (0.029)			
	SB2: ($\tau_1 = 0.33$, $\tau_2 = 0.67$)				
T	*pce*	τ_1	τ_2		
150	72.1	0.329 (0.053)	0.664 (0.047)		
300	86.1	0.336 (0.036)	0.665 (0.027)		
600	90.9	0.336 (0.028)	0.667 (0.013)		
	SB4: ($\tau_1 = 0.2$, $\tau_2 = 0.4$, $\tau_3 = 0.6$, $\tau_4 = 0.8$)				
T	*pce*	τ_1	τ_2	τ_3	τ_4
250	41.3	0.195 (0.056)	0.393 (0.072)	0.588 (0.079)	0.792 (0.063)
500	53.9	0.201 (0.035)	0.395 (0.042)	0.596 (0.043)	0.792 (0.038)
1000	66.0	0.201 (0.024)	0.396 (0.029)	0.599 (0.029)	0.795 (0.025)

Note: We use 1,000 replications of the data-generating process. The variance of the error terms is $\sigma_u^2 = 1$ and their correlation is 0.5. *pce* denotes the percentages of correct estimation of the number of breaks m. The first panel reports the results for one active breakpoint at $\tau = 0.5$, the second panel considers two active breakpoints at $\tau_1 = 0.33$ and $\tau_2 = 0.67$ and the third panel has four active breakpoints at $\tau_1 = 0.2$, $\tau_2 = 0.4$, $\tau_3 = 0.6$, and $\tau_4 = 0.8$. Standard deviations are given in parentheses.

Table S3: Case 1 (strong short-run dynamics, correlated innovations)

	SB1: ($\tau = 0.5$)				
T	*pce*	τ			
100	61.0	0.472 (0.112)			
200	79.3	0.492 (0.064)			
400	88.5	0.498 (0.038)			
	SB2: ($\tau_1 = 0.33$, $\tau_2 = 0.67$)				
T	*pce*	τ_1	τ_2		
150	80.1	0.327 (0.051)	0.665 (0.039)		
300	86.8	0.333 (0.045)	0.666 (0.026)		
600	91.8	0.336 (0.040)	0.665 (0.021)		
	SB4: ($\tau_1 = 0.2$, $\tau_2 = 0.4$, $\tau_3 = 0.6$, $\tau_4 = 0.8$)				
T	*pce*	τ_1	τ_2	τ_3	τ_4
250	29.1	0.238 (0.094)	0.414 (0.102)	0.605 (0.090)	0.784 (0.057)
500	34.9	0.226 (0.081)	0.411 (0.078)	0.606 (0.062)	0.788 (0.045)
1000	68.0	0.219 (0.043)	0.398 (0.037)	0.610 (0.030)	0.794 (0.022)

Note: We use 1,000 replications of the data-generating process. *pce* denotes the percentages of correct estimation of the number of breaks m. The variance of the error terms is $\sigma_u^2 = 1$ and their correlation is 0.5. The first panel reports the results for one active breakpoint at $\tau = 0.5$, the second panel considers two active breakpoints at $\tau_1 = 0.33$ and $\tau_2 = 0.67$ and the third panel has four active breakpoints at $\tau_1 = 0.2$, $\tau_2 = 0.4$, $\tau_3 = 0.6$, and $\tau_4 = 0.8$. Standard deviations are given in parentheses.

Table S4: Case 2 (strong short-run dynamics, correlated innovations)

	SB1: ($\tau = 0.5$)				
T	*pce*	τ			
100	68.8	0.469 (0.095)			
200	84.2	0.488 (0.066)			
400	91.0	0.495 (0.043)			
	SB2: ($\tau_1 = 0.33$, $\tau_2 = 0.67$)				
T	*pce*	τ_1	τ_2		
150	50.6	0.320 (0.094)	0.663 (0.078)		
300	59.6	0.331 (0.071)	0.669 (0.048)		
600	71.5	0.332 (0.047)	0.671 (0.027)		
	SB4: ($\tau_1 = 0.2$, $\tau_2 = 0.4$, $\tau_3 = 0.6$, $\tau_4 = 0.8$)				
T	*pce*	τ_1	τ_2	τ_3	τ_4
250	31.9	0.202 (0.086)	0.396 (0.097)	0.580 (0.111)	0.782 (0.092)
500	36.1	0.210 (0.072)	0.406 (0.068)	0.596 (0.078)	0.800 (0.054)
1000	45.2	0.204 (0.049)	0.404 (0.047)	0.595 (0.051)	0.799 (0.044)

Note: We use 1,000 replications of the data-generating process. *pce* denotes the percentages of correct estimation of the number of breaks m. The variance of the error terms is $\sigma_u^2 = 1$ and their correlation is 0.5. The first panel reports the results for one active breakpoint at $\tau = 0.5$, the second panel considers two active breakpoints at $\tau_1 = 0.33$ and $\tau_2 = 0.67$ and the third panel has four active breakpoints at $\tau_1 = 0.2$, $\tau_2 = 0.4$, $\tau_3 = 0.6$, and $\tau_4 = 0.8$. Standard deviations are given in parentheses.