TABLE 2: Cointegration analysis for bivariate VAR(k) models of inflation and unemployment for Sweden, 1970:2–1998:12

(A) *Cointegration Tests*

# lags	# Unit Roots	Eigenvalue	LR_{tr}	p-value
6	2	.1312	50.00	.00
	1	.0060	2.04	.77
8	2	.0687	26.25	.01
	1	.0063	2.14	.75
10	2	.0573	21.97	.03
	1	.0062	2.08	.76
12	2	.0370	14.61	.25
	1	.0059	1.97	.78

(B) *Testing for Stationarity*

	u_t		π_t	
# lags	LR	p-value	LR	p-value
6	45.90	.00	26.35	.00
8	21.95	.00	13.73	.00
10	17.75	.00	11.98	.00
12	10.55	.00	7.77	.01

(C) *Estimates of* $\pi_t - \beta_u u_t$

# lags	β_u	$\ln L$	AIC	BIC	LIL
6	−1.24	−1112.82	6.70	7.52	6.83
8	−1.24	−1099.26	6.70	7.75	6.86
10	−1.26	−1089.06	6.73	8.02	6.93
12	−1.32	−1067.76	6.69	8.21	6.93

TABLE 3: Testing for serial correlation and ARCH for Sweden in a linear VAR(k) model, 1970:2–1998:12

(A) *Serial Correlation Tests*

# lags	# Unit Roots	Ljung-Box Test	p-value	*LM* Test	p-value
6	0	322.53	.39	12.99	.01
	1	318.42	.48	12.72	.01
8	0	297.45	.59	10.98	.03
	1	295.72	.65	10.68	.03
10	0	295.42	.50	9.78	.04
	1	294.64	.54	9.55	.05
12	0	285.92	.46	8.31	.08
	1	286.51	.48	7.52	.11

NOTES: The Ljung-Box test concerns the first 82 autocorrelations, while the *LM* statistic concerns serial correlation at the 12th lag for the residuals.

(B) *Testing for ARCH*

		u_t-equation		π_t-equation	
# lags	# Unit Roots	ARCH(k)	p-value	ARCH(k)	p-value
6	0	16.22	.01	3.51	.74
	1	15.97	.01	3.50	.74
8	0	21.12	.01	10.98	.20
	1	20.37	.01	10.94	.20
10	0	24.48	.01	10.85	.37
	1	24.51	.01	10.84	.37
12	0	38.90	.00	24.42	.02
	1	39.11	.00	24.39	.01

TABLE 4: Specification based on conditional scores in 2-state MS–VAR(k) systems for Sweden, 1970:2–1998:12

(A) *Equation-by-equation Tests*

	System 1 ($k = 2$)		System 2 ($k = 2$)		System 3 ($k = 2$)	
Hypothesis	$\pi_t + .957u_t$	Δu_t	π_t	Δu_t	π_t	u_t
Autocorrelation	.92	.68	1.38	.72	.84	.35
p-value	.45	.60	.24	.57	.50	.85
ARCH	2.78	2.00	1.78	1.42	1.50	1.90
p-value	.03	.09	.13	.22	.20	.11
Markov	.14	.58	1.03	1.01	1.20	.16
p-value	.96	.67	.39	.40	.31	.96

(B) *System Tests*

Hypothesis	System 1 ($\beta_u = -0.957$)	System 2 ($\beta_u = 0$)	System 3 (π_t, u_t)
Autocorrelation	.71	1.19	.49
p-value	.78	.38	.95
ARCH	1.34	1.29	1.12
p-value	.10	.12	.30
Markov	.42	.95	.80
p-value	.86	.46	.57

(C) *System Properties*

	System 1 ($\beta_u = -0.957$)	System 2 ($\beta_u = 0$)	System 3 (π_t, u_t)
$\ln L(\hat{\theta})$	−1100.96	−1120.08	−1095.66
AIC	6.54	6.66	6.51
BIC	7.33	7.44	7.30
LIL	6.67	6.78	6.64
e_1	.28	.26	1.02
$\hat{\pi}_1$	.39	.43	–
$\hat{\sigma}_{\pi_1}$	.08	.08	–

TABLE 5: Estimated unconditional and conditional means and covariances for inflation and unemployment in Sweden, 1970:2–1998:12

(A) *Unconditional Moments*

System	Variable	Mean	Variance	Covariance
	$\pi_t + .957u_t$	9.61	43.99	
1		(.46)	(6.23)	.14
	Δu_t	.01	.07	(.08)
		(.01)	(.01)	
	π_t	6.53	51.36	
2		(.63)	(6.99)	.11
	Δu_t	.01	.07	(.08)
		(.01)	(.01)	

(B) *Conditional Moments*

Regime 1				
	$\pi_t + .957u_t$	11.20	87.64	
1		(.99)	(15.87)	.22
	Δu_t	.03	.06	(.20)
		(.03)	(.01)	
	π_t	8.52	88.26	
2		(1.12)	(13.98)	.08
	Δu_t	.04	.05	(.18)
		(.03)	(.01)	
Regime 2				
	$\pi_t + .957u_t$	8.57	12.89	
1		(.37)	(1.97)	.04
	Δu_t	−.01	.07	(.07)
		(.01)	(.01)	
	π_t	5.05	18.37	
2		(.56)	(3.11)	.06
	Δu_t	−.01	.08	(.07)
		(.02)	(.01)	

FIGURE 1: Inflation and unemployment series for Sweden in levels and first differences, 1970:2–1998:12

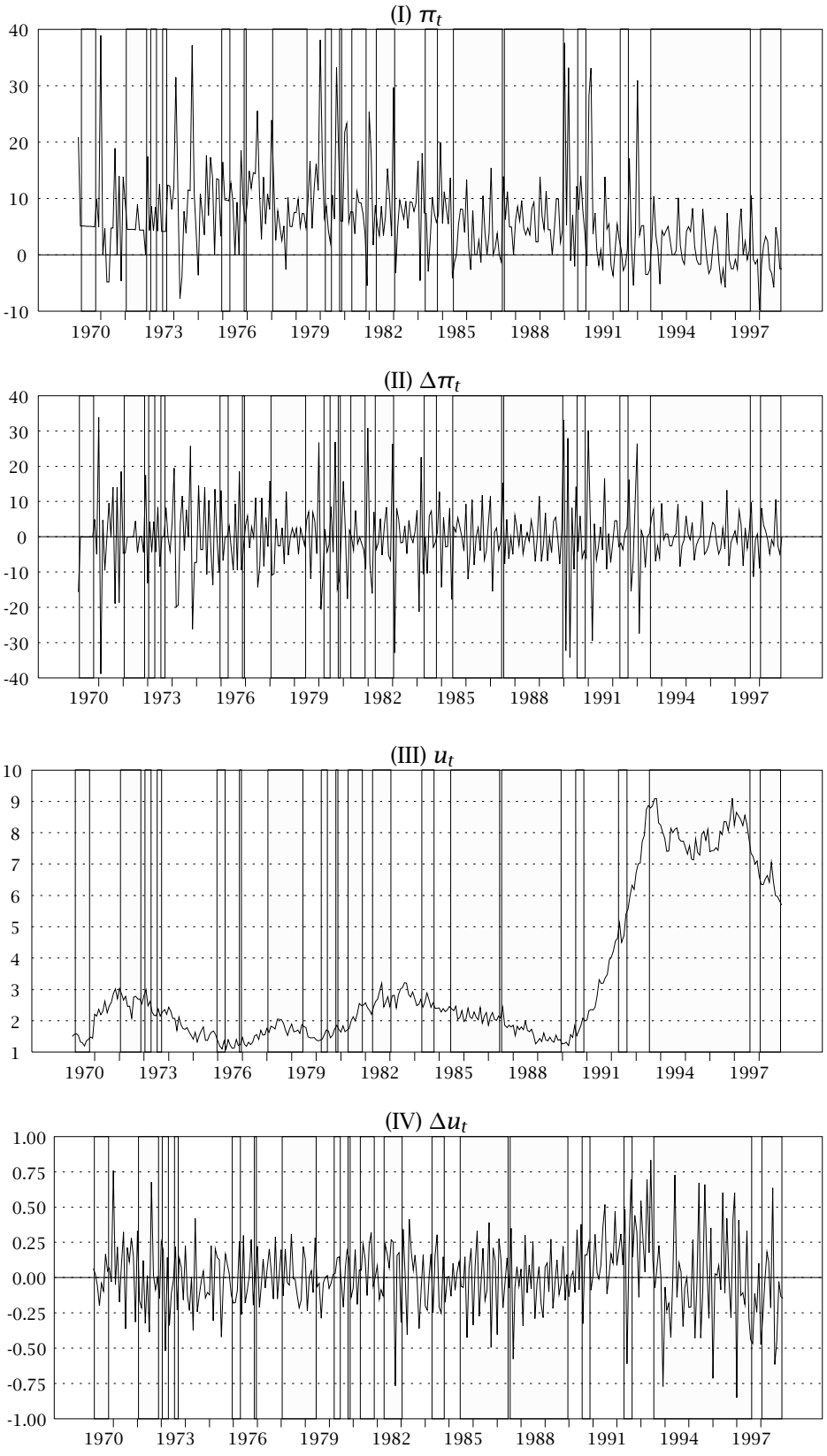
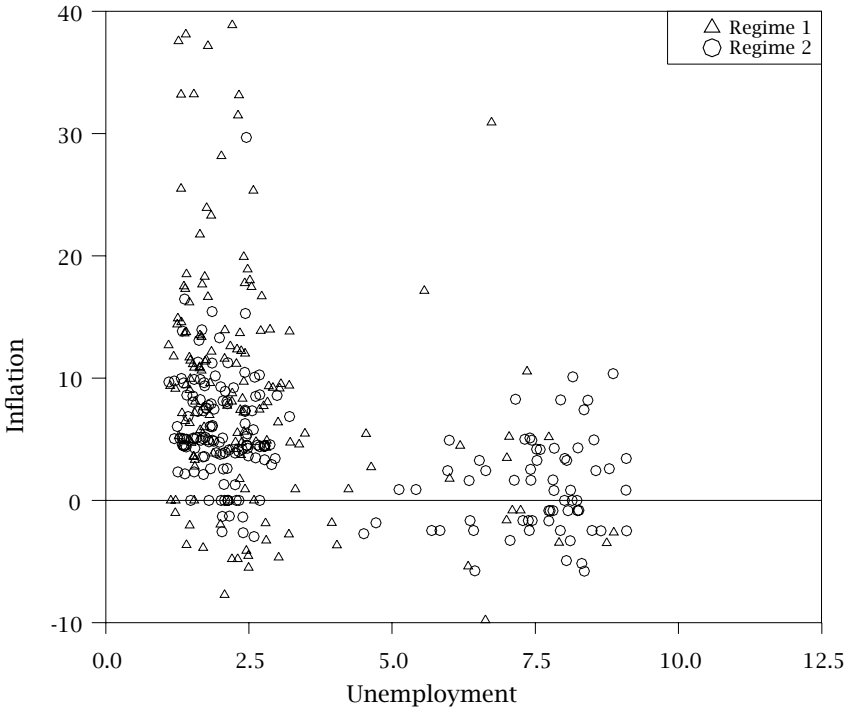


FIGURE 2: Unemployment and inflation in Sweden for the sample 1970:2–1998:12

(I) *Monthly inflation*



(II) *Yearly inflation*

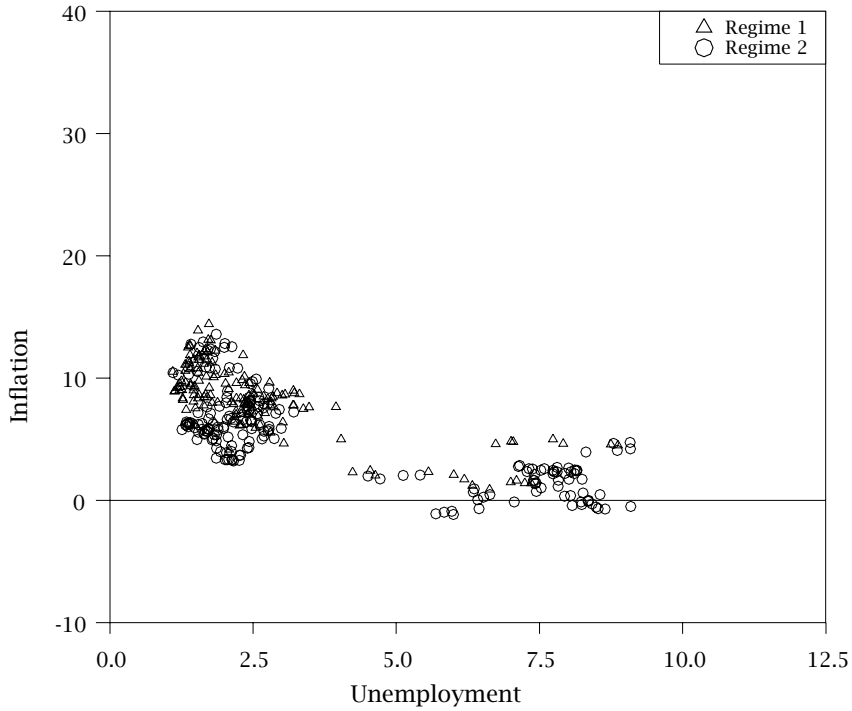


FIGURE 3: The scaled log-likelihood function (solid line) and the estimated maximum eigenvalue (dashed line) for 2–state MS–VAR(2) systems for Sweden, 1970:2–1998:12