Table 1: Summary Statistics (Vitamin C)

Variable	Mean (and standard deviation)					
	Non-cartel period ($I_t = 0$)		Cartel period ($I_t = 1$)		Full sample	
Price (US$/kg)	11.21	(0.88)	13.61	(2.70)	12.43	(2.35)
Roche's unit cost (US$/kg)	5.55	(0.60)	6.28	(0.64)	5.93	(0.71)
Aggregate output (1,000 MT)	44,570	(15,553)	51,393	(13,245)	48,161	(14,404)
of which Roche	20,967	(3,795)	21,744	(1,407)	21,376	(2,748)
of which Takeda	8,609	(2,942)	10,622	(3,092)	9,668	(3,113)
of which E. Merck	4,262	(438)	4,057	(621)	4,154	(537)
of which BASF	2,078	(1,497)	2,663	(745)	2,386	(1,167)
of which fringe	8,654	(8,141)	12,308	(9,443)	10,577	(8,807)
Number of months	112		116		228	

Note: The full sample period is January 1980–December 1998. The main cartel period is January 1991–August 1995. We also set $I_t = 1$ for an earlier (suspected) cartel episode between 1985 and 1988 as well as the 12 months after August 1995 to define the non-cartel period conservatively. Cost and output data are annual, and we treat 1985–1988 and 1991–1996 as the cartel period for these variables. MT (metric ton) is equal to 1,000 kg.

Table 2: GMM Estimates of Demand and Costs (Vitamin C)

Model	(1)	(2)	(3)
Specification of fringe	Time-varying intercept $Q_{fri,t} = \kappa_t$ (Baseline)	Time-varying slope $Q_{fri,t} = \lambda_t P_t$	Time-invariant intercept and time-varying slope $Q_{fri,t} = Q_{fri,1990} + \lambda_t P_t$
α_0	−0.434	0.066	−0.068
	(3.375)	(2.313)	(2.330)
α_1	−0.330	−0.248	−0.312
	(0.002)	(0.002)	(0.005)
α_2	0.391	0.323	0.364
	(0.011)	(0.007)	(0.009)
γ_{roche}	0.011	−0.188	0.107
	(2.597)	(4.400)	(11.813)
γ_{takeda}	3.194	3.136	3.262
	(0.626)	(0.925)	(2.263)
$\gamma_{e.merck}$	4.474	4.426	4.485
	(0.168)	(0.234)	(0.580)
γ_{basf}	4.882	4.880	4.914
	(0.152)	(0.157)	(0.300)
Moment conditions	$\bar{m}_1, \bar{m}_2, \bar{m}_3$	$\bar{m}_1, \bar{m}_2$	$\bar{m}_1, \bar{m}_2$
Number of months	112	112	112

Note: Standard errors in parentheses are based on 1,000 block-bootstrap samples, where each block consists of 12 consecutive months of a calendar year. See Appendix C.3 for vitamins A and E, and beta carotene.

Table 3: Cartel Stability under Hypothetical BASF-Takeda Merger in 1990

Merger scenario	No merger	BASF-Takeda merger								
Synergy (σ)		0	.05	.1	.15	.2	.25	.3	.4	.5
Collusive incentive	329	485	512	483	450	411	367	318	202	64
Coordinated effect	0	156	183	154	121	82	38	−12	−127	−264
(% change)	±0%	+47%	+55%	+47%	+37%	+25%	+11%	−4%	−31%	−80%

Note: The numbers (in thousand dollars) indicate the point estimates of the cartel's collective incentive in equation (**??**) as of August 1995 under $\beta = 0.8$. The first column shows our baseline estimates without merger. The other columns show results under the counterfactual BASF-Takeda merger in 1990 with specific levels of efficiency gain ("synergy"). See equation (**??**) for the definition of synergy, σ.

Table 4: Cartel Stability under Six Different Mergers

Merger scenario	Marginal cost* ($/kg)						Num. of firms*	HHI*	Collusive incentive**	
	Roche	Takeda	E. Merck	BASF	Mean	Std. dev.			($ thousand)	(% change)
No merger	6.26	9.44	10.72	11.13	9.39	2.21	4	3,009	329	±0%
Merger 1	6.26	9.44	10.72	–	8.81	2.30	3	3,395	485	+47%
Merger 2	6.26	9.44	–	11.13	8.95	2.47	3	3,519	407	+24%
Merger 3	6.26	–	10.72	11.13	9.37	2.70	3	3,725	213	−35%
Merger 4	6.26	9.44	–	–	7.85	2.25	2	4,273	342	+4%
Merger 5	6.26	–	10.72	–	8.49	3.16	2	4,661	86	−74%
Merger 6	6.26	–	–	11.13	8.70	3.44	2	4,826	8	−98%

Note: We do not consider synergy in this subsection (i.e., $\sigma = 0$).

* As of December 1990 (i.e., immediately before the beginning of the vitamin C cartel).

** Collective incentive to collude as of August 1995 (i.e., its final month of operation on record) under $\beta = 0.8$.