Asymmetric Cost Adjustment

The public, industry analysts, and government agencies, as well as the academic literature, have long been interested in the question of whether adjustments to costs are asymmetric between cost increases and decreases. In particular, a number of markets have demonstrated that prices adjust more rapidly to cost increases than decreases. Table 4 tests for this type of asymmetry, presenting regressions identical to those in table 2 except that separate terms are included for commodity cost increases and decreases in the current period.

These regressions are inconclusive on the issue of asymmetric price adjustment. The retail data appear to support the view that prices respond more quickly to price decreases than increases, while the manufacturer data do not show evidence of an asymmetry. Specifications allowing for asymmetric responses to changes in costs at 2, 3 and 4 lags were considered. The estimated models did not systematically support the view that prices respond more quickly to either price increases or decreases. This finding is consistent with the findings in Gomez and Koerner (2002) for the United States, France, and Germany. By contrast, Aguiar and Santana (2002) found evidence that increases in commodity costs are passed on more than decreases for a high-inflation period in Brazil, suggesting that inflation may influence the extent of asymmetry in pass-through. Asymmetric price adjustment is difficult to investigate using these data partly because commodity cost increases for green coffee beans have generally occurred more rapidly than decreases over the period studied.

Table 4
Regression of current price changes on past changes in cost with asymmetry terms[1] (quarterly data)

Variable	Log manufacturer prices		Log retail prices	
	Base	Net	Base	Net
Δ Cost +(t)	0.185	0.099	-0.209	-0.008
	(0.065)	(0.105)	(0.024)	(0.048)
Δ Cost –(t)	0.428	0.318	0.055	0.448
	(0.076)	(0.099)	(0.037)	(0.082)
Δ Cost (t-1)	0.439	0.464	0.449	0.369
	(0.029)	(0.052)	(0.016)	(0.033)
Δ Cost (t-2)	0.002	0.043	0.301	0.016
	(0.028)	(0.035)	(0.009)	(0.017)
Δ Cost (t-3)	-0.016	0.043	0.056	0.101
	(0.024)	(0.035)	(0.009)	(0.017)
Δ Cost (t-4)	0.005	0.049	-0.020	0.178
	(0.027)	(0.038)	(0.011)	(0.020)
Δ Cost (t-5)	0.053	0.047	0.015	0.040
	(0.024)	(0.029)	(0.010)	(0.018)
Δ Cost (t-6)	-0.055	-0.031	0.099	-0.026
	(0.025)	(0.035)	(0.010)	(0.021)
Constant	-0.005	-0.002	0.002	0.007
	(0.0003)	(0.001)	(0.0002)	(0.0003)
Quarter dummies	YES	YES	YES	YES
Number of observations	2506	2506	46243	46243
R^2	0.190	0.101	0.061	0.079

Source: Authors' analysis of Nielsen, Promodata, and New York Board of Trade data.
[1]The dependent variable in these regressions is the change in price in a particular quarter. The standard errors are clustered by brand.