Supplementary material

Table S1

Equilibrium solutions of basic model in two scenarios

	Scenario N	Scenario B
Retail prices	$p_i{}^N = \frac{4a\rho h_{max} - A^2k^2}{4h_{max}(2+b)}$	$p_i{}^B = \frac{4h_{max}(a+c) - (A-c)^2}{4h_{max}(2+b)}$
Collection prices	$h_i{}^N = \frac{Ak}{2}$	$h_i{}^B = \frac{A-c}{2}$
profits	$\pi_i{}^N = \frac{[A^2(1+b) + 4a\rho h_{max}]^2}{16h_{max}{}^2(2+b)^2}$	$\pi_i{}^B = \frac{[(1+b)(A-c)^2 + 4h_{max}(a-c-bc)]^2}{16h_{max}{}^2(2+b)^2}$

Table S2

Equilibrium solutions of model E1 in two scenarios

	Scenario N	Scenario B
Retail prices	$p_I{}^N = \frac{A^2k^2b - 2(A-c)^2 + h_{max}[2c + a\rho(2-b)]}{4(4-b^2)h_{max}}$	$p_i{}^B = \frac{4h_{max}(a+c) - (A-c)^2}{4h_{max}(2+b)}, i \in \{I, E\}$
	$p_E{}^N = \frac{b(A-c)^2 - 2A^2k^2 - 4h_{max}[bc - a\rho(2-b)]}{4(4-b^2)h_{max}}$	
Collection prices	$h_I{}^N = \frac{A-c}{2}, h_E{}^N = \frac{Ak}{2}$	$h_i{}^B = \frac{A-c}{2}, i \in \{I, E\}$
profits	$\pi_I{}^N = \frac{[(2-b^2)(A-c)^2 + A^2bk^2 - 4ch_{max}(2-b^2) + 4a\rho h_{max}(2-b)]^2}{16(4-b^2)^2h_{max}{}^2}$	$\pi_i{}^B = \frac{[(1+b)(A-c)^2 + 4h_{max}(a-c-bc)]^2}{16h_{max}{}^2(2+b)^2}, i \in \{I, E\}$
	$\pi_E{}^N = \frac{[b(A-c)^2 + A^2k^2(2-b^2) - 4h_{max}(bc - 2a\rho + ab\rho)]^2}{16(4-b^2)^2h_{max}{}^2}$	

Table S3

Equilibrium solutions of model E2 in two scenarios

	Scenario N	Scenario B
Quality levels	$H_I{}^N = \frac{\begin{matrix}2c^2\eta(\theta-\omega)^2 + 4a\rho\omega[2\theta - (2-b)\omega] \\ + A^2\eta(\theta-\omega)(2\theta - 2\omega + bk^2\omega)\end{matrix}}{4\omega[8\theta\omega - (4-b^2)\omega^2 - 4\theta^2]}$	$H_i{}^B = \frac{[(A-c)^2\eta - 4c](\theta-\omega) + 4a\omega}{4\omega[(2+b)\omega - 2\theta]}$ $i \in \{I, E\}$
	$H_E{}^N = \frac{\begin{matrix}2Ak\eta(Ak - 2c)(\theta-\omega)^2 + Ab\eta\omega(A-2)(\theta-\omega) \\ + \omega[(8a\rho + bc^2\eta - 4bc)(\theta-\omega) + 4ab\rho\omega]\end{matrix}}{4\omega[8\theta\omega - (4-b^2)\omega^2 - 4\theta^2]}$	
Collection prices	$h_I{}^N = \frac{A-c}{2}, h_E{}^N = \frac{Ak}{2}$	$h_i{}^B = \frac{A-c}{2}$ $i \in \{I, E\}$
profits	$\pi_I{}^N = \frac{\begin{matrix}\{2\theta^2[(A-c)^2\eta - 4c] - \theta\omega[4c^2\eta + A^2\eta(4 + bk^2)^2 \\ - 2c(8 + 4A\eta + A\eta bk) + 24\rho] \\ (\omega-\theta) + \omega^2[(4c - c^2\eta + 2Ac\eta - A^2\eta)(b^2-2) - 2Acbk\eta \\ + A^2\eta bk^2 - 12\rho(-2+b)]\}\end{matrix}}{16\omega[8\theta\omega - (4-b^2)\omega^2 - 4\theta^2]^2}$	$\pi_i{}^B = \frac{(\omega-\theta)\{[(A-c)^2\eta - 4c](\theta - \omega - b) - 4a\omega\}^2}{16\omega[(2+b)\omega - 2\theta]^2}$ $i \in \{I, E\}$

$$\pi_E{}^N = \frac{\begin{array}{c}(\omega-\theta)\{[2Ak\eta\theta(\theta-2\omega)+Ak\eta\omega^2(2-b^2)](Ak-2c)\\ +\theta\omega b[4c-\eta(A-c)^2]+8a\rho\omega(\theta+\omega)\\ +b\omega^2[A^2\eta-c(4+2A\eta-c\eta)-4a\rho]\}\\ \{(\theta-\omega)[4Ack\eta(\theta-\omega)+2Abc\omega\eta-A^2b\omega\eta+bc\omega(4-c\eta)]\\ +A^2\eta k^2[2\theta^2-4\theta\omega+\omega^2(2-b^2)]-4a\rho\omega[2\theta-\omega(2+b)]\}\end{array}}{16\omega[8\theta\omega-(4-b^2)\omega^2-4\theta^2]^2}$$

$$a_0 = \frac{(\theta-\omega)\omega[bc(c\eta-4)+A^2\eta b]+2Ac\eta[2k\theta^2-(b+4k)\theta\omega+(b+2k-b^2k)\omega^2]-A^2\eta k^2[2\theta^2-4\theta\omega+(2-b^2)\omega^2]}{4\rho\omega[2\theta-(2-b)\omega]}$$