

Quantifying Cartel Damages

Some Notes

2nd E.CA Competition Law and Economics Expert Forum

Half-day special focus on cartels

Berlin, 14 March 2014

Prof. dr. Maarten Pieter Schinkel



Collusion in the Chain of Production

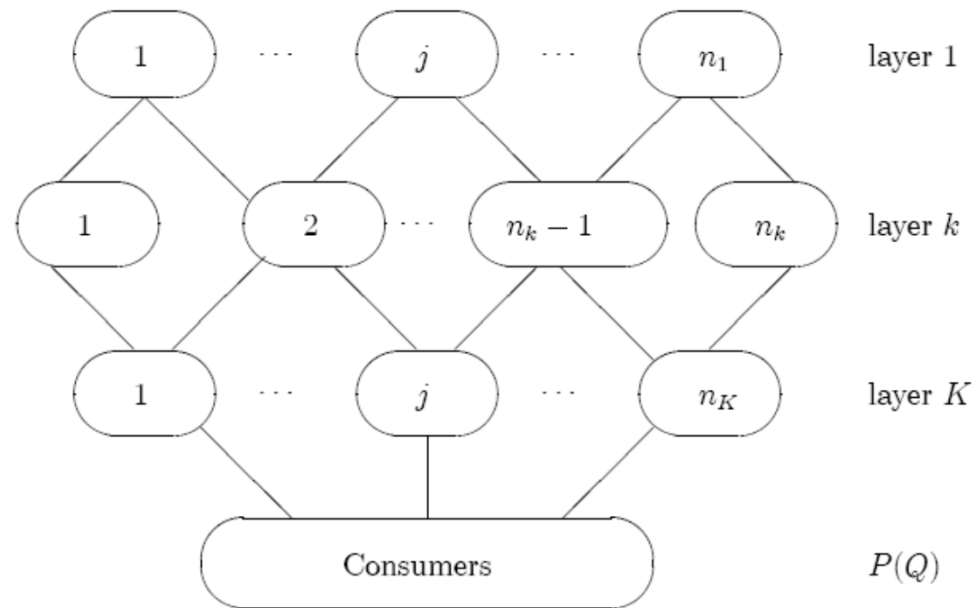


Figure 1: A vertical chain of production.

Source: Han, Schinkel and Tuinstra (2010)



Damages percolate through the Chain of Production

- K layers of production, with n_k firms in layer k producing a homogeneous quantity for firms in layer $k + 1$ (one-to-one fixed-proportions production technology)..
- Final consumer demand for layer K is $P(Q)$.
- Cost function for firm j in layer k given as $p_{k-1}q_{jk} + c_{jk}(q_{jk})$ (with $p_0 = 0$).
- Firms are price-takers on their input markets.



Equilibrium under *competition* and *collusion* (in layer g) characterised by

Q^* = 'competitive' equilibrium quantity,

p_k^* = 'competitive' equilibrium price of layer k ,

Q^g = equilibrium quantity, when firms in layer g are colluding,

p_k^g = equilibrium price of layer k , when firms in layer g are colluding,

where

$$Q^* > Q^g,$$

$$p_k^* \leq p_k^g \quad \forall k.$$



Decomposition of Harm, 1/2

Downstream Effects

For every layer k we can decompose the harm of the cartel in three distinct effects:

$$\Delta\pi_k = \sum_{j=1}^{n_k} \pi_{jk}^* - \sum_{j=1}^{n_k} \pi_{jk}^g = \xi_k - \omega_k + \sigma_k,$$

1. *Overcharge effect*: the amount by which firms in layer k are overcharged:

$$\xi_k = Q^g (p_{k-1}^g - p_{k-1}^*).$$

2. *Pass-on effect*: the amount firms in layer k pass on to the next layer of firms:

$$\omega_k = Q^g (p_k^g - p_k^*).$$

3. *Output effect*: lost profits from decrease in sales volume:

$$\sigma_k = (Q^* - Q^g) (p_k^* - p_{k-1}^*) + \sum_{j=1}^{n_k} \left(c_{jk} (q_{jk}^g) - c_{jk} (q_{jk}^*) \right).$$



Decomposition of Harm, 2/2

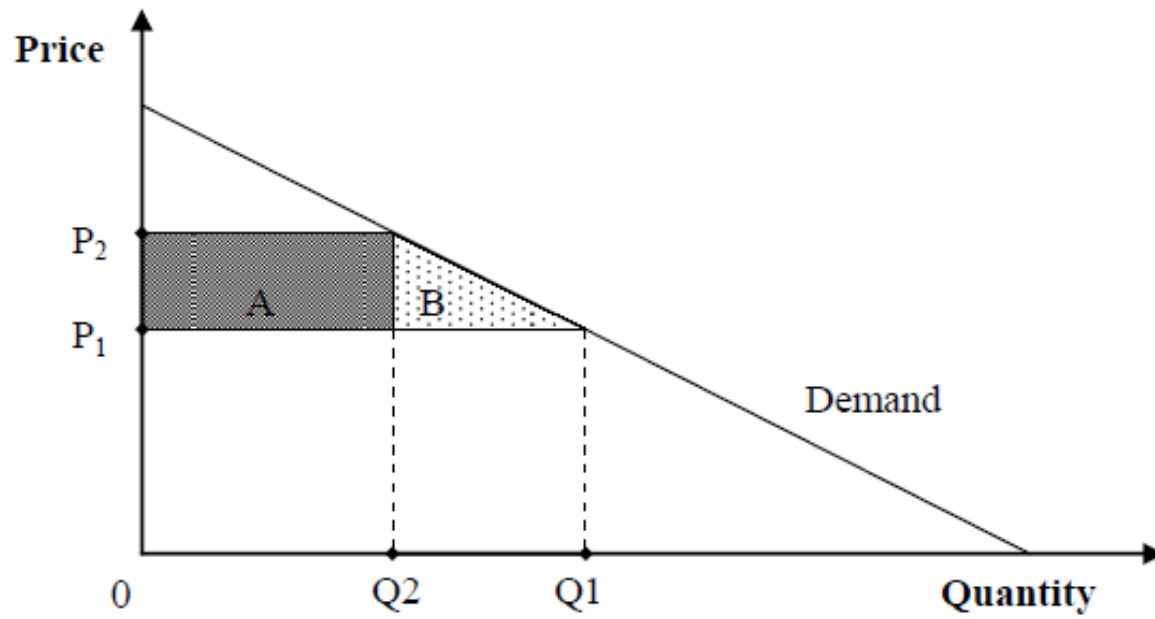
Final Consumer Effects

The loss in consumer surplus of the **final consumers** is given by

$$\Delta CS = CS^* - CS^g = \xi_c + \sigma_c,$$

with $\xi_c = Q^g (P^g - P^*)$ the overcharge effect, and $\sigma_c = \int_{Q^g}^{Q^*} [P(Q) - P^*] dQ$ the output effect.





Source: Guidance paper *Quantifying Harm* (2013)

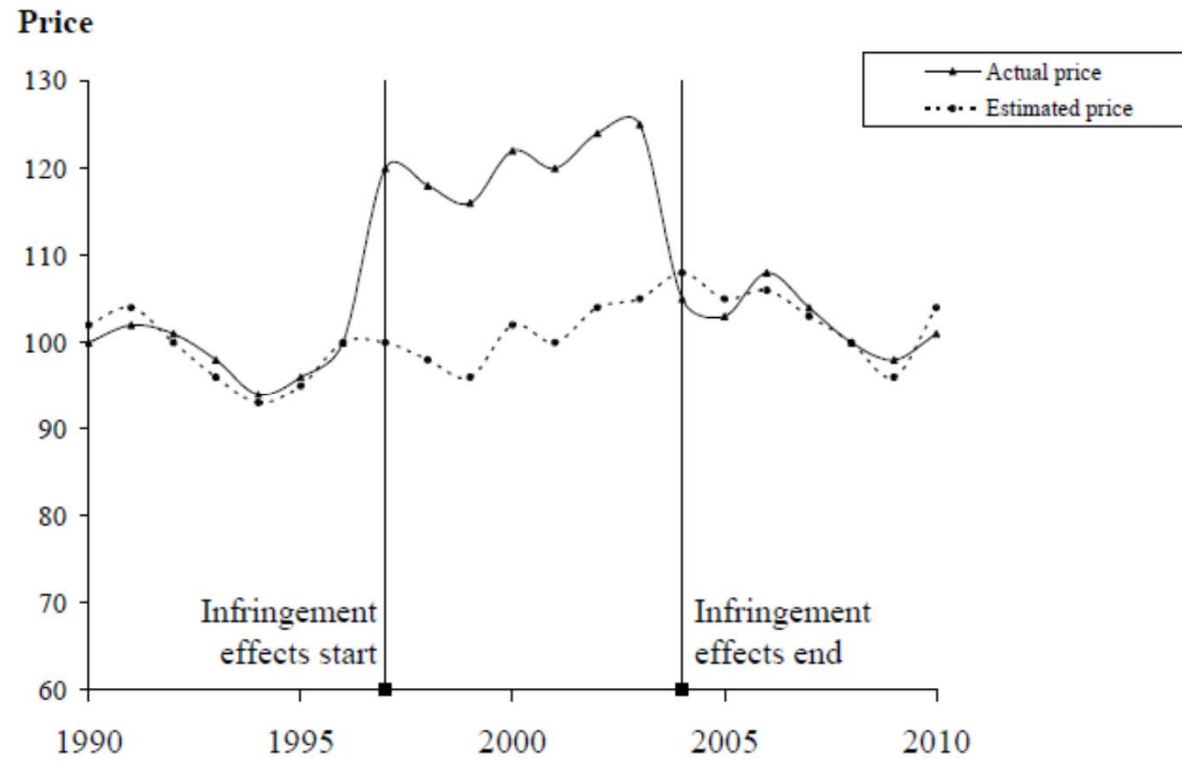


164	RWS - Wacht	31-12-1936	1.181.000,-	+ 0	75.000,-	afgekoop met -8-ld. u-5 ZNZC.	JS	T	Afspraak f 25.000,- p.k.
1304	RWS - NN RW-28 Ann	31-12-1936	2.967.000,-	-/ 0	2.500,-	OEF-97	AdW	T	Afspraak de f 25.000,- afgeen met Gem. Neerj... / ZNZC.
1	Gem. Groningen	31-12-1936	334.000,-	+ 0	50.000,-	OEF-97	AdW	T	1e Combi Koop/Reef. uitkering f 5000,- v/d Combi = f 2500,- uitkeren.
2	Gem. Beilen	31-12-1936	181.000,-	+ 0	1.000,-	OEF-97	AdW	T	Amisierig: Van Keren/Reymann/uws/Smitje/Koof. With. eind '96 f 50.000,-
36	Gem. Bellingwedde	31-12-1936	927.000,-	-/ 0	2.000,-	OEF-97	AdW	T	Afspraak f 1000,- eind '36.
147	RWS - ZH ind. resp. over. Geminen.	30-06-1937	5176.000,-	0	0	-	JS	T	Koop 1e/ Afspraak f 2000,- p.k. aan 17 aann. eind '96 uitkeren. Combi = Kuw/HWZ/Van Keren. Afspr. = Kuw 5 1% / HWZ 1% / Van Keren Werk besp.

1936	1.181.000,-	+ 0	75.000,-	afgekoop met -8-ld
1936	2.967.000,-	-/ 0	2.500,-	OEF-
1936	334.000,-	+ 0	50.000,-	OEF-
1936	181.000,-	+ 0	1.000,-	OEF-
1936	927.000,-	-/ 0	2.000,-	OEF-

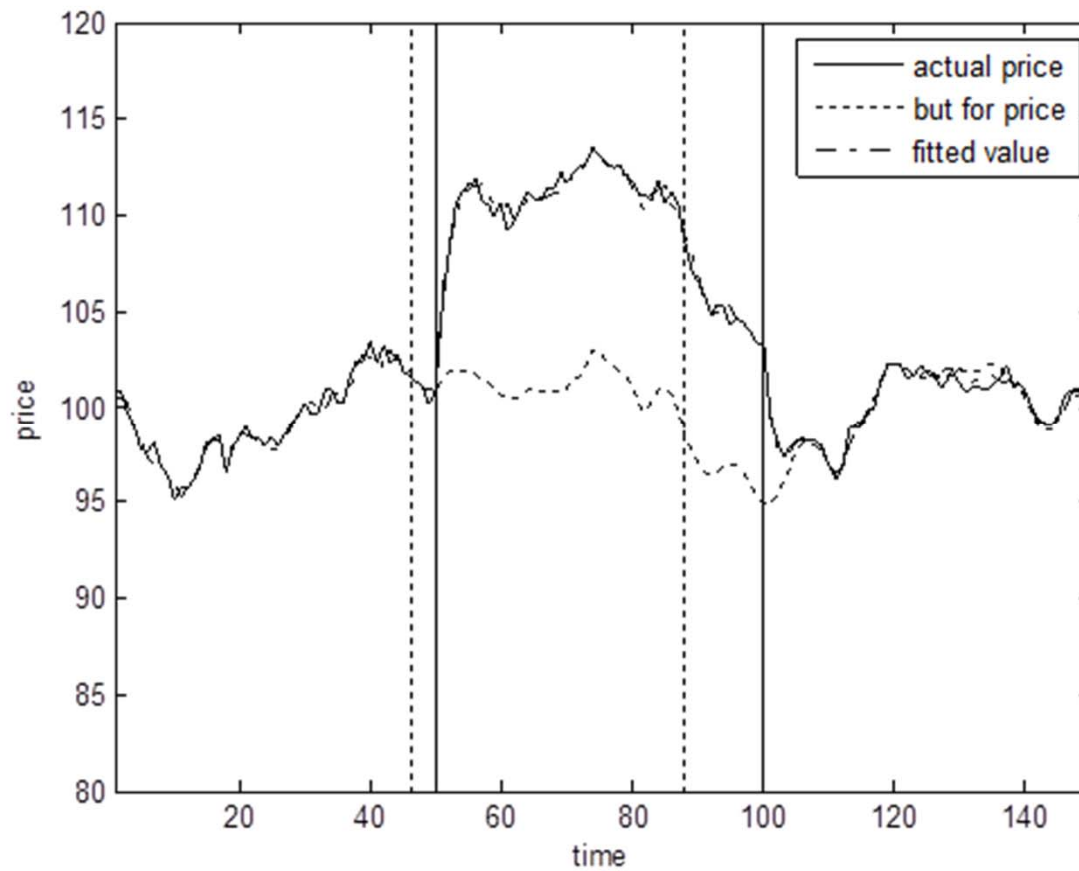
Source: Bos accounts (1996)





Source: Guidance paper *Quantifying Harm* (2013)





Source: Boswijk, Bun and Schinkel (2014)



Concluding Remarks

- Lots of exciting development in assessment of damages – Practical Guide leaves room
- What standards of proof will emerge? – quality of data and analysis (CV iso CS)
- A full model of the chain would be preferable
- In practice, it's about the plaintiff's pass-through
- Understanding the cartel mechanism is key
- Potential conflict with leniency and settlements – draft directive

