Cartel Damages: On the Commission's Call for "Simplified Rules on Estimating the Loss"

Maarten Pieter Schinkel
University of Amsterdam and ACLE

CCP 5th Annual Conference
Cartels and Tacit Collusion
Norwich, 18-19 June 2009

UNIVERSITEIT VAN AMSTERDAM
Amsterdam Center for Law & Economics

Damages tend to percolate through the chain of production

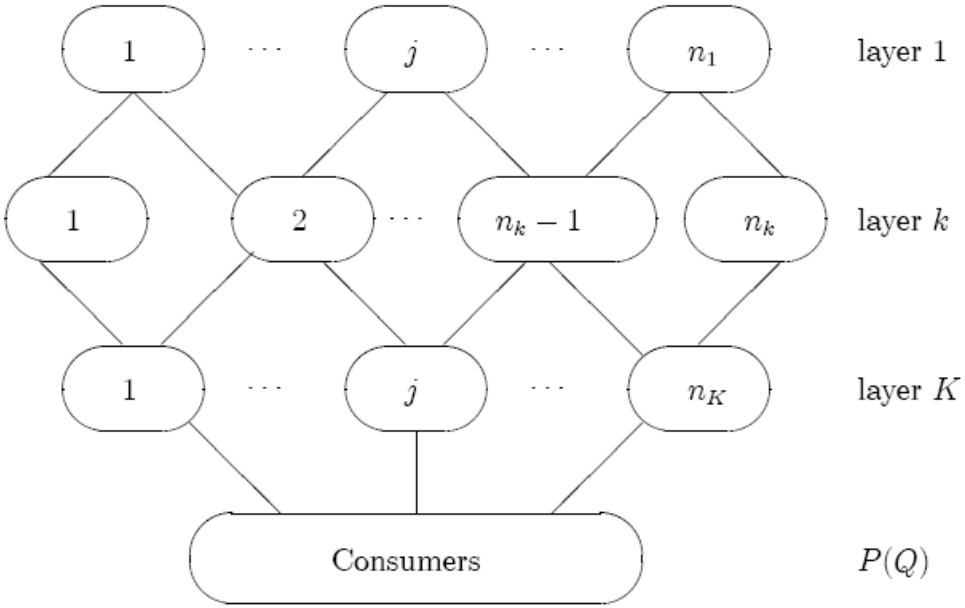


Figure 1: A vertical chain of production.

U.S. Antitrust Damages Practice

•*Clayton Act* (1914), Section 4:

"Any person who shall be injured in his business or property by reason of anything forbidden in the antitrust laws […] shall recover threefold the damages by him sustained.

•*Mandeville Island Farms* (1948): wide interpretation of "Any person"

•*American Crystal Sugar* (1952): overcharge as measure of harm
•*Hanover Shoe* (1968): passing-on defense denied
•*Illinois Brick* (1977): standing restricted to direct purchaser
•*Contractors v. Carpenters* (1983): upstream excluded from "zone of harm"

The Overcharge as Measure of Harm

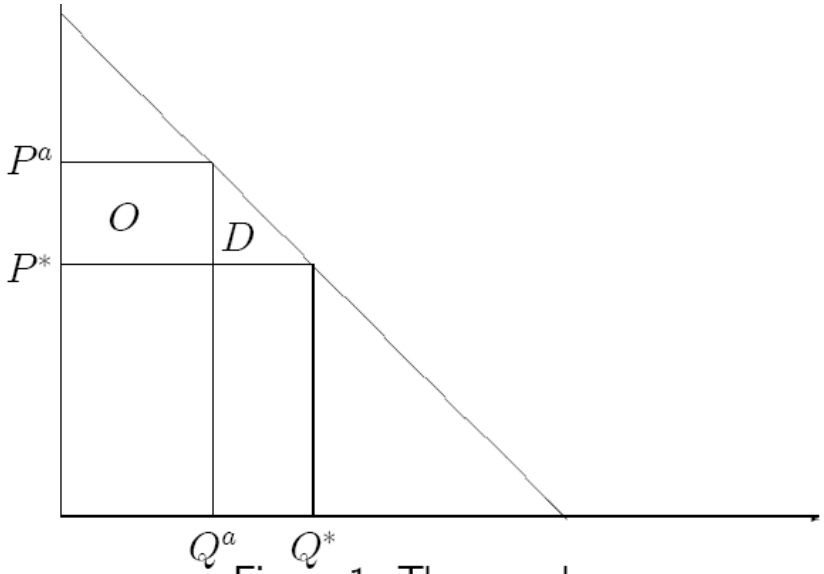


Figure 1: The overcharge

Overcharge = price increase cartel $\times$ amount purchased: $O = Q^a\,(P^a - P^*)$.

Antitrust Damages Claims are Coming to Europe

- Encouraged by the European Commission
- Full legal standing – *Courage* (2001), *Manfredi* (2006)
- Passing-on defense allowed
- No punitive damages – but pre-trial interest
- No opt-out class actions – some opt-in initiatives (CDC)
- No/limited possibilities for contingency fees

- Hardly a (visible) practice yet – but some seminal initiatives

GLOBAL COMPETITION REVIEW

DG Comp seeks damages from elevator cartel

13 June 2008

The European Commission is taking private enforcement action against the four elevator manufacturers it prosecuted last year.

DG Comp fined Thyssenkrupp, Otis, Schindler and Kone €992 million - the commission's highest-ever cartel fine - for price-fixing, bid-rigging, allocating markets and sharing confidential information.

The offences took place between 1995 and 2004, but DG Comp said at the time that the effects could continue for as long as 50 years, because the company that installs an elevator usually carries out the maintenance.

The Commission welcomes the confirmation by the Court of Justice of the **types of harm** for which victims of antitrust infringements should be able to obtain compensation.[12] The Court emphasised that victims must, as a minimum, receive **full compensation** of the **real value of the loss suffered**. The entitlement to full compensation therefore extends not only to the **actual loss** due to an anti-competitive price increase, but also to the **loss of profit** as a result of any reduction in sales and encompasses a **right to interest**.

To **facilitate** the **calculation of damages**, the Commission therefore intends:[13]

- to draw up a framework with pragmatic, non-binding guidance for **quantification** of damages in antitrust cases, e.g. by means of **approximate methods of calculation** or **simplified rules on estimating** the loss.

White Paper (April 2008)

2. Full compensation includes compensation for actual loss (damnum emergens), loss of profit (lucrum cessans) and payment of interest from the time the harm occurred until it has actually been compensated.

Draft Directive (informally circulated April 2009)

suffered. The actual loss results from the price difference between what was actually paid and what would have been paid in the absence of the infringement. When an injured party has reduced its actual loss by passing it on, entirely or in part, to its own purchasers (or its own suppliers, in the case of an infringement that relates to the supply of the infringing undertaking), the loss thus passed on no longer constitutes harm for which the party that passed it on has to be compensated. It is therefore appropriate to allow an infringing undertaking to invoke the passing-on of actual loss as a defence against a claim for damages.

infringing undertaking, to prove the scope of that harm. To alleviate the burden of proof for a claimant showing himself to be a purchaser of goods or services that are affected by the infringement, it is appropriate to presume that the actual loss initially suffered by the one who made the purchase from the infringing undertaking has been fully passed on to the claimant. The infringing undertaking should be allowed to rebut this presumption by showing that the actual loss has not been passed on. Where the infringing undertaking can only show that part of the actual loss has not been passed on, it should still compensate the claimant for the remaining part.

Some Recent Contributions to the Debate

- Kosicki and Cahill (2006) – survey pass-on in US context
- Hellwig (2006) – monopoly pass-on equals DWL
- Verboven and van Dijk (2007) – discounts for marginal price increases
- Basso and Ross (2007) – discounts for discrete price increases
- Boone and Mueller (2008) – consumer harm share

- Basic three layer model
- Upstream cartel

A Model of Total Chain Antitrust Damages

- 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.

UNIVERSITEIT VAN AMSTERDAM
Amsterdam Center for Law & Economics

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

$$\begin{aligned} Q^* &= \text{'competitive' equilibrium quantity,} \\ p_k^* &= \text{'competitive' equilibrium price of layer } k, \\ Q^g &= \text{equilibrium quantity, when firms in layer } g \text{ are colluding,} \\ p_k^g &= \text{equilibrium price of layer } k, \text{ when firms in layer } g \text{ are colluding,} \end{aligned}$$

where

$$\begin{aligned} Q^* &> Q^g, \\ p_k^* &\leq p_k^g \quad \forall\ k. \end{aligned}$$

Decomposition of Harm, 1/2
Downstream Effects

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

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

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

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

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

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

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

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

Decomposition of Harm, 2/2
Upstream and Consumer Effects

The decomposition $\triangle\pi_k = \xi_k - \omega_k + \sigma_k$ applies straightforwardly to **upstream layers**.

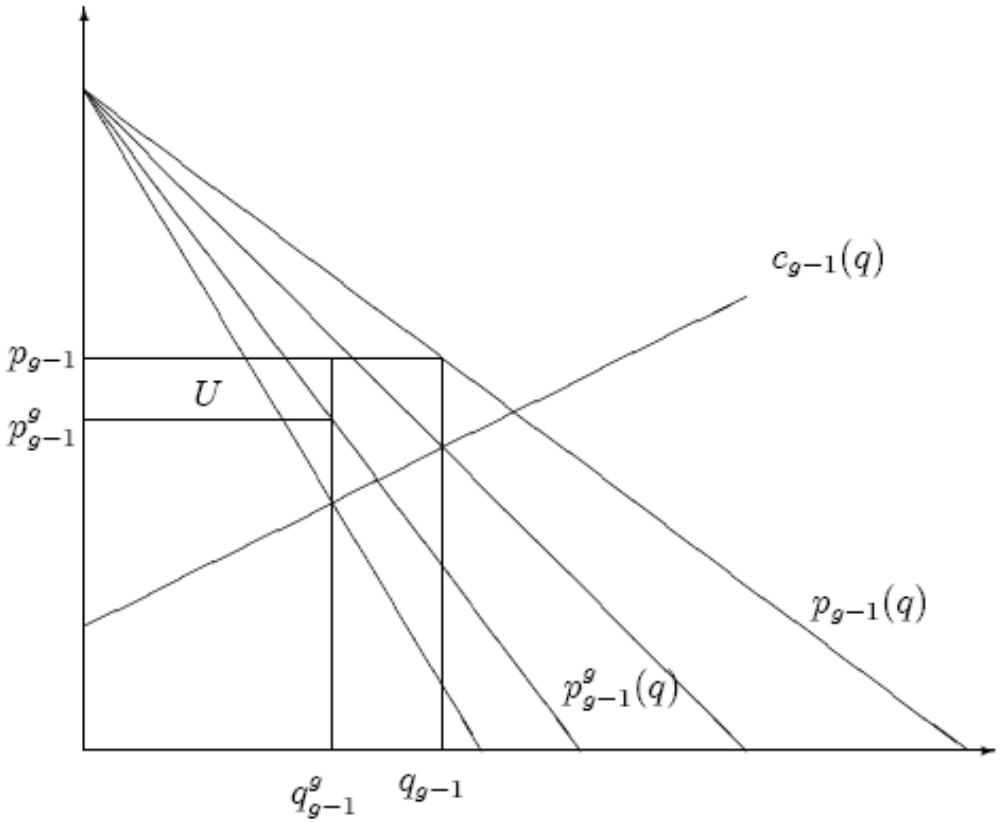
Note that the 'overcharge' and 'pass-on' effects for upstream firms may be negative (if upstream prices *decrease*).

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

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

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

Upstream Damages: An Undercharge



UNIVERSITEIT VAN AMSTERDAM
Amsterdam Center for Law & Economics

Proposition 1 *The direct purchaser overcharge is equal to the sum of all dowstream overcharges, net of pass-ons,* $\sum_{k=1}^{K} (\xi_k - \omega_k) + \xi_C = \xi_{g+1}$.

Direct Purchaser Overcharge as Denominator

Aggregate downstream damages multiplier:

$$\lambda_D = \frac{d_D}{\xi_{g+1}} = \frac{\sum_{k=g+1}^{K} \triangle\pi_k + \triangle CS}{\xi_{g+1}} = \frac{\xi_{g+1} + \sum_{k=g+1}^{K} \sigma_k + \sigma_c}{\xi_{g+1}}.$$

Aggregate upstream damages multiplier:

$$\lambda_U = \frac{d_U}{\xi_{g+1}} = \frac{\sum_{k=1}^{g-1} \triangle\pi_k}{\xi_{g+1}} = \frac{-\omega_{g-1} + \sum_{k=1}^{g-1} \sigma_k}{\xi_{g+1}}.$$

Model Specifications

Inverse demand function

$$P(Q) = a - bQ^{\gamma}, \text{ with } a, b, \gamma > 0.$$

and constant marginal costs (the same for all firms in the same layer):

$$p_{k-1}q + c_{jk}(q) = (p_{k-1} + c_k)\, q.$$

Cournot competition with *conjectural variations*, with the conjectural variations parameter given as $\vartheta_k = \frac{\partial Q}{\partial q_{jk}}$ representing:

1. Cournot competition: $\vartheta_k = 1$;
2. Bertrand competition (perfect competition): $\vartheta_k = 0$; and
3. (Full) Collusion: $\vartheta_k = n_k$.

Equilibrium quantity and prices are

$$Q^* = \left[\frac{1}{b}\left(\prod_{i=1}^{K}\frac{n_i}{n_i+\gamma\vartheta_i}\right)\left(a-\sum_{j=1}^{K}c_j\right)\right]^{\frac{1}{\gamma}},$$

$$p_k^* = \left(1-\prod_{i=1}^{k}\frac{n_i}{n_i+\gamma\vartheta_i}\right)\left(a-\sum_{j=1}^{K}c_j\right)+\sum_{l=1}^{k}c_l \qquad \forall\ k\in\{1,...,K\}.$$

Collusion in layer g represented by an increase in ϑ_g to $\vartheta_g^c \in (\vartheta_g, n_g]$.

This gives $Q^g < Q^*$ with

$$r=\frac{Q^g}{Q^*}=\left(\frac{n_g+\gamma\vartheta_g}{n_g+\gamma\vartheta_g^c}\right)^{\frac{1}{\gamma}} \quad \text{and} \quad \begin{cases} p_k^g > p_k^* & \text{for } k=g,g+1,\ldots,K \\ p_k^g = p_k^* & \text{for } k=1,\ldots,g-1. \end{cases}$$

Aggregate downstream damages multiplier is

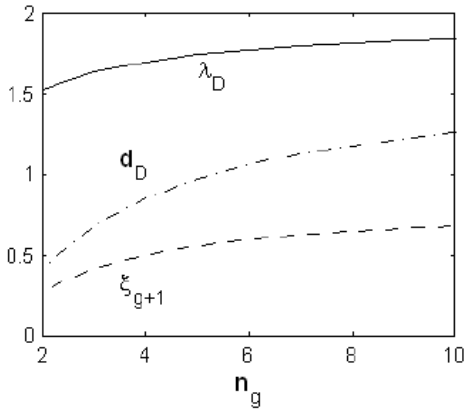
$$\lambda_D = \frac{d_D}{\xi_{g+1}} = \frac{\sum_{k=g+1}^{K} \triangle \pi_k + \triangle CS}{\xi_{g+1}} = \frac{1 - r^{\gamma+1}}{r\left(1 - r^{\gamma}\right)} \left(1 - \frac{1}{\gamma + 1} \prod_{i=g+1}^{K} \frac{n_i}{n_i + \gamma \vartheta_i} \right).$$

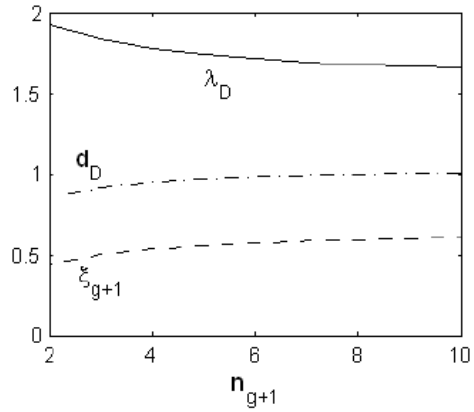
Note that $\lambda_D > 1$ and that λ_D increases with:

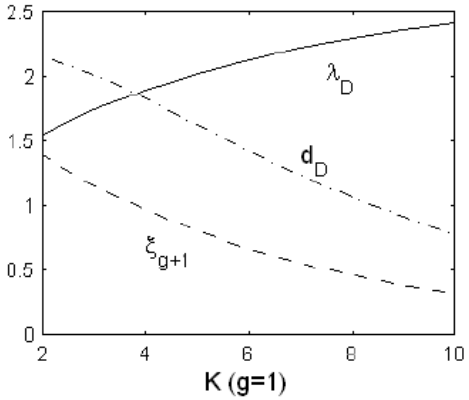
(i) pre-cartel competition in layer g;

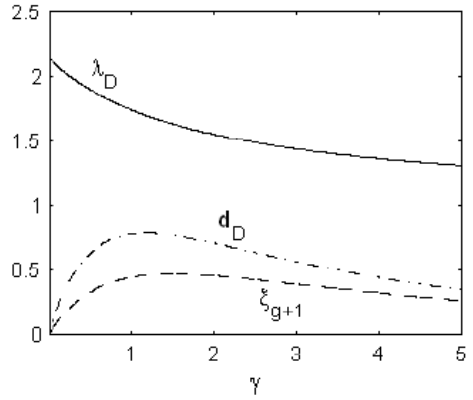
(ii) market power of intermediate downstream layers;

(iii) number of downstream layers $(K - g)$









UNIVERSITEIT VAN AMSTERDAM
Amsterdam Center for Law & Economics

Proposition 3 *For any finite number $\overline{M} > 0$, there exists a market structure such that $\lambda_D \geq \overline{M}$.*

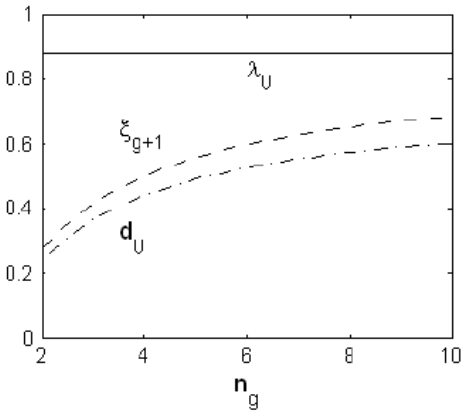
The *aggregate upstream damages* multiplier is

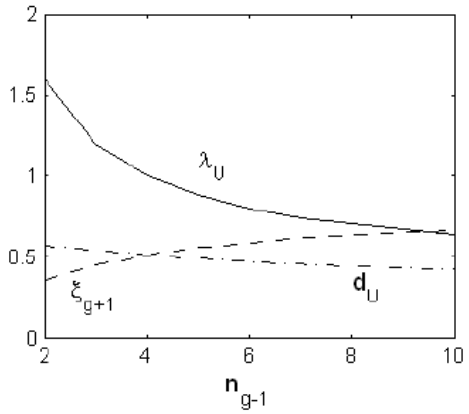
$$\lambda_U = \frac{d_U}{\xi_{g+1}} = \frac{\sum_{k=1}^{g-1} \triangle \pi_k}{\xi_{g+1}} = \frac{(1-r)}{r\left(1-r^{\gamma}\right)} \frac{n_g + \gamma \vartheta_g}{n_g} \left(\prod_{i=1}^{g-1} \frac{n_i + \gamma \vartheta_i}{n_i} - 1 \right).$$

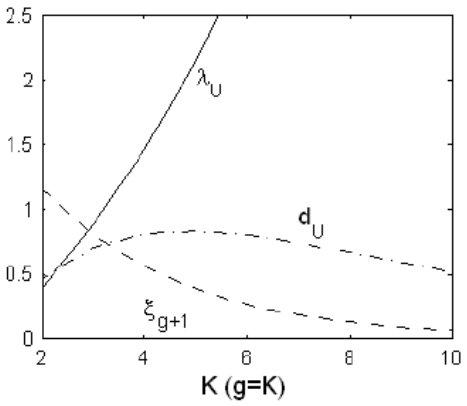
Increases with:

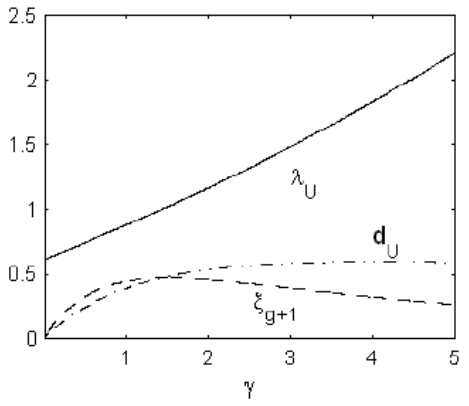
(i) market power of upstream layers;

(ii) number of upstream layers $(g-1)$.



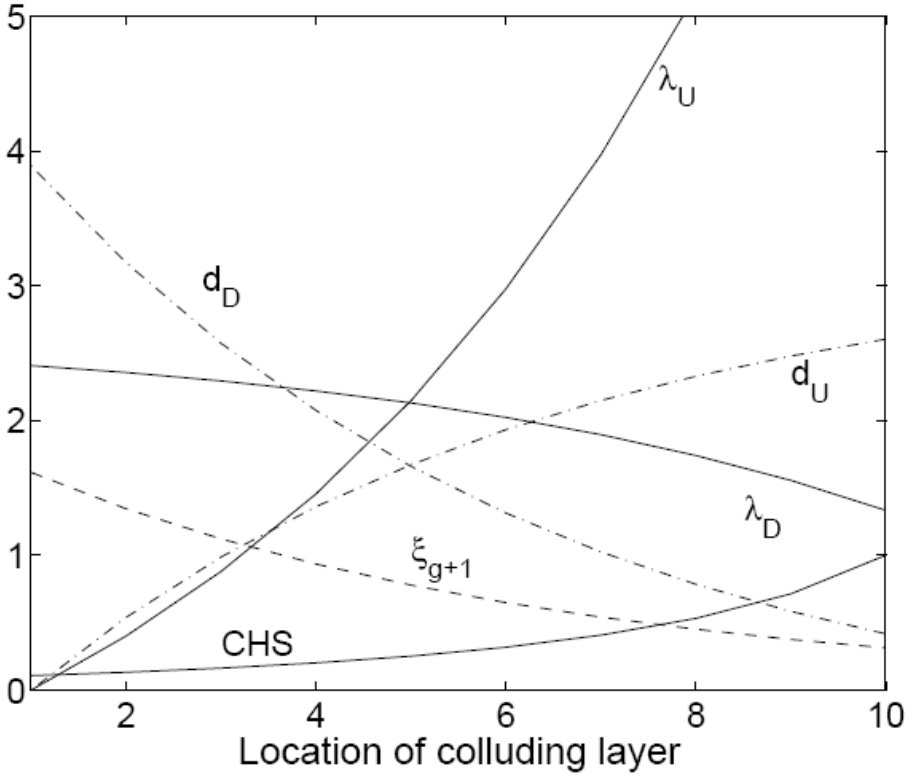






UNIVERSITEIT VAN AMSTERDAM
Amsterdam Center for Law & Economics

Proposition 4 *For any finite number $\overline{M} > 0$, there exists a market structure such that $\lambda_U \geq \overline{M}$.*



UNIVERSITEIT VAN AMSTERDAM
Amsterdam Center for Law & Economics

Proposition 5 *Consider two distinct layers, g and $h > g$ that have the same characteristics: $n_h = n_g$, $\vartheta_h = \vartheta_g$, and, if one of these layers would collude, $\vartheta_h^c = \vartheta_g^c$. Let $\triangle W_k$ be the change in welfare if layer k colludes. Then $\triangle W_h = \triangle W_g$, $\xi_{h+1} < \xi_{g+1}$ and $\lambda_{W,h} > \lambda_{W,g}$.*

Conclusions

- The direct purchaser overcharge equals the sum of all downstream pass-ons
- Yet, it misses all output effects and consumer DWL
- The direct purchaser DWL is not a good proxy of total chain DWLs
- The overcharge method is more off, the closer the cartel is to end consumers
- Upstream damages can be relatively large

- Why restrict sophisticated econometrics to but-for only?
- 'Collect first, redistribute later' only works for direct purchaser overcharge
- Little hope for "simplified rules on estimating the loss" (EC, 2008)
- 100% pass-on presumption further complicates approximate quantification
- Upstream cartel effects should be properly viewed as antitrust damages