

# Resale Price Maintenance and Market Coverage

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# Introduction and Motivation

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## Background and Relevance

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- Legal treatment of Resale Price Maintenance (RPM)
  - EU: *per se* violation of Art. 101(1) TFEU.
  - US: *rule of reason*-approach since Leegin (2007)
- Exemptions for certain markets/industries/sectors
- Germany as an example
  - RPM in a narrow sense: books, travelling agencies
  - in a wider sense: prescription drugs, tobacco

- Why exemptions?
  - Political/social goals beyond “free” equilibrium outcome
  - Public services, such as “public transport, health, social services [...] culture and communication” (European Economic and Social Committee)
- Example: Prescription drugs  $\Rightarrow$  Health Policy; books  $\Rightarrow$  cultural policy
- Esp. geographical dimension relevant
  - Accessibility for general population determined by number/distribution of outlets (bookstores, pharmacies)  $\Rightarrow$  e-Commerce!
  - Entry barriers, quality (service provision, medical advice, etc.)

## Background and Relevance – Prescription drugs

- Policy goal: general population should have access to pharmacy services ⇒ comprehensive supply in geographical dimension
- Uniform prices (or co-payments) for prescription drugs in several countries (e.g., Germany, France, Canada, Austria, New Zealand, Switzerland)
- Typically not RPM in a narrow sense ⇒ regulated co-payments and pharmacy margins
- Legal treatment closely related to RPM
- ECJ-ruling C-148/15 from Oct. 16, 2016
  - Ban on rebates granted by mail-order pharmacies not in line with European competition rules
  - Defendant failed to show that RPM-system suitable to achieving intended policy goals
  - ECJ went as far as to say that free prices were more effective!

## Background and Relevance – Prescription drugs

- ECJ-ruling from 2016 recently confirmed by German Federal Court of Justice
- BGH-ruling I ZR 74/24 from July 17, 2025
  - Mail-order pharmacies still allowed to grant rebates
  - System as it was in place prior to 2012 (see above) not in line with internal market rules
  - New system since 2020 not subject to decision ⇒ Current system is “RPM light”; possibility of new case stressed in decision!
  - The court demanded **evidence** of causality (in a wider sense, including theory) that RPM-system is suitable to achieve policy goals!

This motivates us to analyze . . .

- whether RPM can be a suitable policy tool to enhance market coverage,
- and how results depend on feasibility of input price discrimination.

## Background and Literature

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On market coverage and public service provision:

- [Foros and Kind, 2003] analyze welfare effects of increased competition under uniform and regional pricing regimes; They identify reduced market coverage as one key mechanism of welfare reduction through competition under uniform prices.
- [Götz, 2013] analyzes the trade-off between market coverage and penetration considering differences in market size.
- “Sister paper” by us and Götz examines how IPD vs uniform prices affect market coverage and total demand when markets vary in size and with competition upstream.

Discussion of RPM:

- RPM eliminates double marginalization and mitigates free-riding ([Telser, 1960, Mathewson and Winter, 1983, Mathewson and Winter, 1986]).
- Potential downsides: reduced service quality and risk of collusion ([Dertwinkel-Kalt and Wey, 2024, Hunold and Muthers, 2024]).

**No existing study analyzes RPM through the lens of market coverage in heterogeneous markets.**

## The Model

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### Supply side:

- Homogeneous good produced at zero marginal costs with wholesale price  $w$ .
- Multiple downstream firms (retailers), each active in separate markets of heterogeneous size  $\theta \Rightarrow$  Interpretation of  $\theta$  in terms of customers in catchment area
- $\theta \in [0, 1]$ , larger  $\theta$  implies more customers in catchment area
- Retailers incur fixed costs  $f$
- Upstream firm can make a “take-it-or-leave-it offer”
- If a market is covered: exactly one retailer active in the market  $\Rightarrow$  Not price competition by construction  $\Rightarrow$  Double marginalization vs. downstream rents shape results

Demand side:

- Demand in market  $\theta$  reads:

$$q_\theta = \theta q(p),$$

i.e., market size affects demand multiplicatively.

- Assume downward-sloping, (weakly) convex demand function:  $q' < 0, q'' \leq 0$ .

“Marginal” market is the **smallest market covered**  $\tilde{\theta}(p, w)$

$$\begin{aligned}\pi_{\theta}(p, w; \theta) &= \theta q(p)(p - w) - f \stackrel{!}{=} 0 \\ \Leftrightarrow \tilde{\theta}(p, w) &\equiv \frac{f}{q(p)(p - w)}\end{aligned}$$

Key properties of  $\tilde{\theta}(p, w)$ :

- The smaller  $\tilde{\theta}(p, w)$ , the larger market coverage
- Denominator of  $\tilde{\theta}$  is downstream profits. Therefore,  $\tilde{\theta}$ 
  - decreases in  $p$  (for all  $p < p_M$ ).
  - increases in  $w$  and  $\frac{\partial^2 \tilde{\theta}}{\partial w^2} > 0$ .
- Note: *Larger*  $\tilde{\theta}$  imply *larger* marginal markets, thus *less* market coverage.

Aggregated demand and upstream profits across all covered markets can be formulated as follows.

$$Q(p; \theta) = \int_{\tilde{\theta}(p, w)}^1 \theta q(p) d\theta$$
$$\Pi(p, w; \theta) = wQ(p; \theta).$$

## Properties of Heterogeneous Markets

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1. The multiplicative relationship between market size  $\theta$  and demand  $q(p)$  implies  $p$  is independent of  $\theta$ .
2. In absence of transfers or similar interventions, there is always partial market coverage by construction ( $\min \theta = 0$ ).

# Results

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## Results in a Nutshell

	No RPM	RPM
<b>UIP</b>	<ul style="list-style-type: none"><li>• Retail price <math>p_N</math> high</li><li>• Input price <math>w_N</math> high</li><li>• Market coverage: relatively large</li><li>• Aggregate demand: low</li></ul>	<ul style="list-style-type: none"><li>• Retail price <math>p_R</math> lower</li><li>• Input price <math>w_R</math> lower</li><li>• Market coverage: reduced</li><li>• Aggregate demand: higher</li></ul>
<b>IPD</b>	<ul style="list-style-type: none"><li>• Marginal market: <math>w = 0</math></li><li>• Retail price <math>p = p_M</math></li><li>• Market coverage: maximized</li><li>• Aggregate demand: determined by <math>p_M</math></li></ul>	<ul style="list-style-type: none"><li>• RPM sets <math>p = p_M</math> in all markets</li><li>• <math>w(\theta) = 0</math> in marginal market</li><li>• Market coverage: also maximized</li><li>• Aggregate demand: maximized</li></ul>

*Takeaway:* RPM reduces coverage under UIP, but with IPD coverage is maximized regardless; RPM + IPD jointly delivers both high demand and broad coverage.

## Results I

- Input Price Discrimination (IPD) allows the upstream firm to restore “second-best” market coverage through choice of market specific input prices ( $w = 0$  and  $p = p_M$  in marginal market).
- With uniform input prices RPM increases demand by eliminating double marginalization (lower  $p$ ) but reduces market coverage (larger  $\tilde{\theta}$  (trade-off: market coverage vs penetration)).
- Combining RPM with IPD maximizes both demand and market coverage, offering superior outcomes over isolated policies.
- Findings are particularly relevant for public-service markets (e.g., healthcare, cultural goods, internet access).

## Results II





### Uniform Input Prices




- Prices are lower with RPM ( $p_R < p_N$ )
- Aggregate demand is larger with RPM ( $Q_R > Q_N$ )
- Market coverage is lower with RPM ( $\tilde{\theta}_R > \tilde{\theta}_N$ )

### Input Price Discrimination

- Prices are lower with RPM ( $p_R < p_N$ )
- Aggregate demand is larger with RPM ( $Q_R > Q_N$ )
- Market coverage is identical ( $\tilde{\theta}_R = \tilde{\theta}_N$ )

**Combining RPM with IPD allows for maximizing market coverage and demand.**

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