BECCLE

BERGEN CENTER FOR COMPETITION LAW AND ECONOMICS

Current ideas on RPM

Bjørn Olav Johansen

University of Bergen and BECCLE

"More Pros and Cons of Vertical Restraints"

Stockholm, November 2019

www.beccle.no
post@beccle.uib.no

UNIVERSITY OF BERGEN

NHH

Introduction

- **Price restrictions**
  - Highly controversial both in practice and in the economic literature
  - Some conflict between economic theory and legal status of RPM

- **Competition law**
  - Fixed of minimum prices are “bad” – in practice per se illegal in the EU (but not per se illegal in principle)
  - Maximum prices are tolerated (not on the EU hardcore list)
  - US policy after Leegin: “rule of reason” for both max and min RPM

Economic theory

- **Pro-competitive theories of RPM**
  - Elimination of double margins (max RPM)
    Spengler 1950, Rey and Tirole 1986, …
  - Promotion of retail services and quality certification (min RPM)
    Telser 1960, Marvel-McCafferty 1984, Mathewson and Winter 1984, …

- **Anti-competitive theories of RPM**
  - RPM as a facilitating practice (min RPM)
    Jullien-Rey 2007, Innes-Hamilton 2009, Rey-Vergé 2010, 2019 …
  - Eliminates scope for opportunism (max RPM – and min as well)
    O'Brien-Shaffer 1992, Rey-Vergé 2004, Rey-Vergé 2019, …

Appropriate policy?

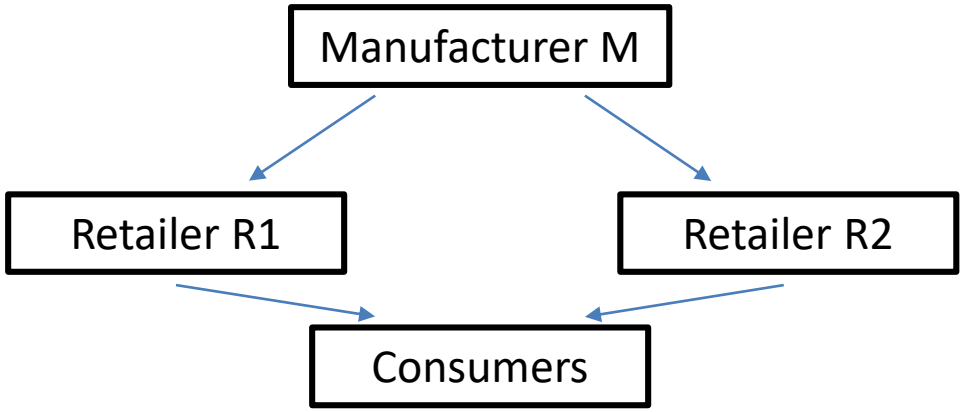
- **Should we adopt a rule of reason to fixed and min RPM?**
  - The rule of reason approach strongly relies on the traditional retail services argument
  - How robust is the service argument?
- **Should we adopt a stricter policy towards max RPM?**
  - Strongly relies on the idea that max RPM eliminates the scope for opportunism in negotiations (thus protect upstream market power)
  - How robust is the argument that max RPM can remove opportunism?
- **Today's presentation**
  - Gabrielsen-Johansen 2017 demonstrate how both of the arguments above are fragile
  - Gabrielsen-Johansen-Lømo 2018 show how, in a two-sided market, maxRPM is good and minRPM is bad (so no need for a new approach!)

Gabrielsen-Johansen 2017

- **Retail services**
  - The traditional retail services argument has been formalized in models with public contracts
  - Public contracts allows the manufacturer to commit to terms of trade that incentivize retailers appropriately
  - But what if contracts are secret? Contracts are at least “imperfectly observable” or “partially secret” in many settings
- **Manufacturer opportunism**
  - With secret contracts, buyers with market power have an incentive to ask for, and manufacturer has an incentive to give, secret discounts Hart-Tirole 1990, O’Brien-Shaffer 1992 (w/o retail services)
  - Max RPM may eliminate this incentive
  - But what if retailers also provide some services to consumers?

Secret contracts and retail services

- **Market structure**
  - Manufacturer (monopolist), constant marginal production cost c
  - Two differentiated retailers, i=1,2, set prices (p_1, p_2) and provide services or "sales effort" (e_1, e_2)
  - Cost of sales effort, $C_i(0) = 0$, $C_i(e_i) > 0$, $C_i' > 0$, $C_i'' > 0$
  - Retailers' demands increasing in own effort level, increasing or decreasing in rival's effort level (positive or negative spillovers)



Secret contracts and retail services

- **"Bilateral RPM" game**
  - Manufacturer offers a non-linear input price $T_i(q_i)$, with or w/o a *maintained retail price* $\hat{p}_i$ (max or min), to each retailer
  - Retailers observes only their own input price (and maintained price), then accept or reject the contract offer

- **"Industry-wide RPM" game**
  - Manufacturer commits to a public industry-wide price $\hat{p}$ (max or min)
  - Then offers secret non-linear input prices $T_i(q_i)$
  - Retailers observes only their own input price (but both are bound by the same industry-wide RPM clause), then accept or reject

(Here: we will assume simple two-part tariffs, $\boldsymbol{T(q) = F + wq}$)

Secret contracts and retail services

- **A caution regarding secret contracting**
  - Secret contracting raises difficult issues (out-of-equilibrium beliefs, …)
  - With "passive beliefs" (tractable and commonly used) and price competition Perfect Bayesian Equilibria may not exist (Rey-Vergé 2004)
  - Instead we rely on the commonly used concept of a "contract equilibrium" or "Nash-in-Nash" bargaining equilibrium

- **Contract equilibrium/ Nash-in-Nash bargaining**
  - Focus on a buyer-seller pair's bilateral incentives to deviate from their contract terms (w_i, F_i), given the other equilibrium terms (w^*, F^*)
  - Equilibrium when no pair has an incentive to alter their terms of trade

Secret contracts and retail services

- No retail services—**No RPM (O'Brien-Shaffer 1992)**
  - Retailers buy the product "at cost" ($w^* = c$), retail prices p^* determined by the degree of retail competition alone ($c < p^* < p^M$)
- **Intuition**
  - Each manufacturer-retailer pair M-R_j maximizes their joint profit, holding fixed R_i's terms and retail price
  - R_i's price-cost margin is positive in equilibrium (R_i has market power), implying M-R_j have incentive to freeride on this margin (by cutting w_j)
  - Because there is no strategic price response to a secret discount, this incentive to undercut continues all the way to $w_j = c$

Secret contracts and retail services

- No retail services—**with bilateral RPM (O'Brien-Shaffer 1992)**
  - M imposes a maximum RPM equal to p^M, and then sets the marginal wholesale prices equal to p^M as well ($w^* = p^M$ and $p^* = p^M$)
- **Intuition**
  - Each manufacturer-retailer pair M-R_j maximizes their joint profit, holding fixed R_i's terms and retail price
  - Incentive for secret discounts was caused by R_i's positive price-cost margin, as M-R_j have an incentive to freeride on this margin
  - By eliminating the retail margins altogether (max RPM + margin squeeze), opportunism is removed
  - Note, in this equilibrium, as long as the retail price is fixed, M-R_i are indifferent between $w_i = p^M$ and $w_i < p^M$ (weak equilibrium)

Secret contracts and retail services

- **Retail services—No RPM (Gabrielsen-Johansen 2017)**
  - Retailers buy the product "at cost" ($w^* = c$), retail prices p^* and services e^* determined "as if" retailers owned the product
- **Intuition**
  - Same intuition as before, only that now the retailer engage in both price and non-price competition
  - R_i's price-cost margin is positive in equilibrium (R_i has market power), implying M-R_j have incentive to freeride on this margin (by cutting w_j)
  - Because there is no strategic price (or service) response to a secret discount, this incentive to undercut continues all the way to $w_j = c$

Secret contracts and retail services

- **Retail services—with bilateral RPM (Gabrielsen-Johansen 2017)**
  - Outcome is identical to the outcome without RPM
- **Intuition**
  - Each manufacturer-retailer pair M-R_j maximizes their joint profit, holding fixed R_i's terms and retail price
  - W/o non-price competition, incentive for secret discounts could be removed by eliminating the retail margins altogether (max RPM + margin squeeze)
  - With non-price competition, there is a strict incentive for M-R_j to agree on a lower w_j to induce $e > 0$
  - Because there is no strategic response (secret discount), the incentive to reduce wholesale prices continues all the way to $w_i = w_j = c$

Secret contracts and retail services

- **Retail services—with industry-wide RPM (Gabrielsen-Johansen 2017)**
  - Retailers buy the product "at cost" ($w^* = c$), maintained industry-wide price $\overline{p}$ set so as to maximize overall industry profit, given that $e = e^*(m)$ is a function of the retail margin $m = \overline{p} - c$
- **Intuition**
  - Because only the RPM clause is observable, and because retailers engage in non-price competition, M is unable to commit to a wholesale price different from the marginal cost c
  - M will therefore distort $\overline{p}$ at first stage in order to induce a second-best combination of price $\overline{p}$ and service level $e^*(m)$

Secret contracts and retail services

- **Welfare effect of industry-wide RPM**
  - Industry-wide RPM allows M to commit to a higher price, which is harmful in the absence of retail services
  - Clearly industry-wide RPM may therefore be harmful also in the case with retail services
  - However, RPM may be harmful even when service spillovers are positive and retailers do not compete in prices (i.e., local monopolists)
  - In this case, w/ public contracts, the retailer optimally use min RPM and then stimulate retail services by setting $w < c$
  - With secret contracts, we have $w = c$ in equilibrium, and therefore, in order to stimulate services $e^*(m)$, M will distort upward the retail price $\overline{p}$ instead—which may hurt consumers

Secret contracts and retail services

- **Welfare effect of industry-wide RPM (cont'd)**
  - Motta (2004), in a setting with public contracts, uses a linear demand example to demonstrate how min RPM clauses may be good for welfare because they stimulate retail services
  - Using the same demand system, we find that minimum RPM is bad for welfare if contracts are secret (while max RPM is good)
  - In order to stimulate services, M will distort the retail price upward, above what constitutes the monopoly price for the same service level, which hurts consumers
  - Casts some doubt on the traditional service argument
  - See also Hunold and Muthers (2017)

Gabrielsen-Lømo-Johansen 2018

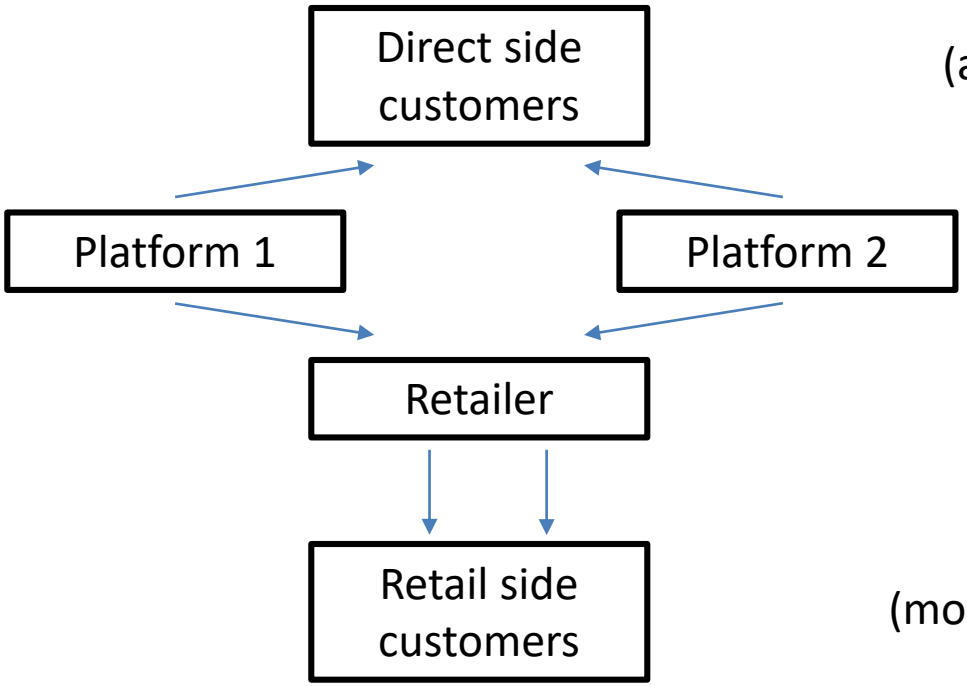
- **Two sided markets**
  - Platforms selling to two distinct groups of customers, e.g. video game consoles, payment cards, online auctions, …
- **Resale price maintenance**
  - We often observe that two-sided platforms impose different forms of price restrictions
  - Sometimes imposed on sellers on the platform (no-surcharge rules for payment cards, price parity clauses on online platforms, …)
  - Sometimes imposed on the retailers that are dealing with one of the two groups of customers on behalf of the platform (e.g., Apple, Sony, Microsoft's "minimum advertised price" policies, …), i.e., RPM

Two-sided markets and RPM

- **Market structure**
  - Two symmetric two-sided platforms, $i = 1,2$, produce differentiated services or products to two groups of buyers
  - Direct side (d) buyers (e.g., advertisers, application or game developers, …) buy directly from the platform
  - Retail side (r) buyers (e.g., newspaper readers, mobile users, …) purchase from the platform indirectly through a retail agent
  - Each platform has a constant marginal cost of production on each side, c_d on the direct side and c_r on the retail side.
  - Indirect network effects from side r to d are *positive* (i.e., advertisers and app developers always value more readers and smartphone users)
  - Indirect network effects from side d to r are *positive or negative* (i.e., readers may like or dislike ads, …)

Two-sided markets and RPM

- **Market structure**



(application developers, …)

(Apple and Google, …)

(mobile smartphone users, …)

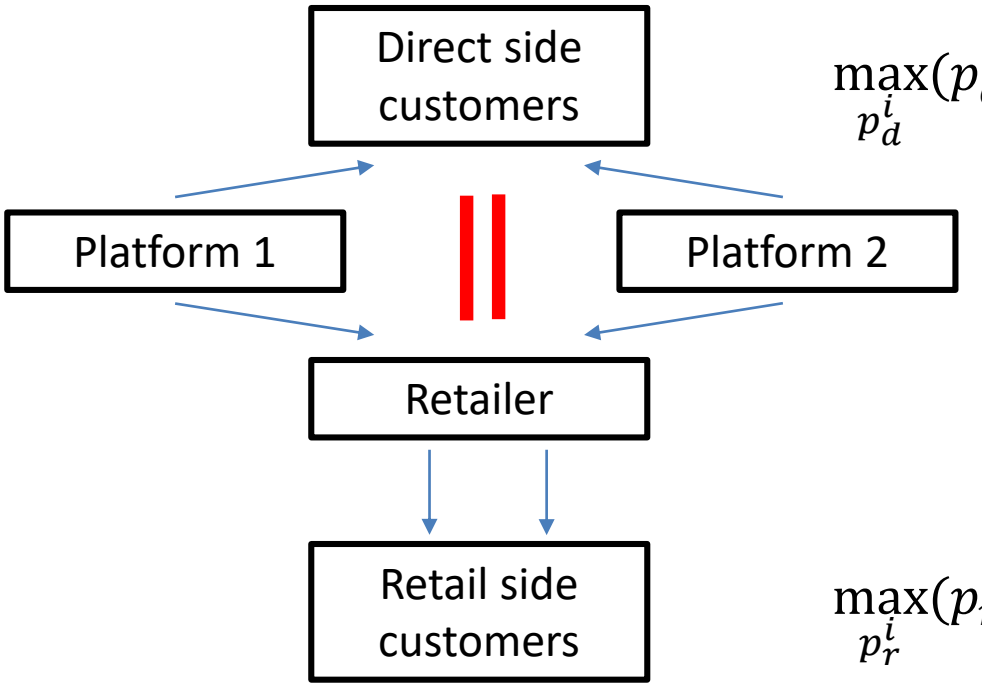
Two-sided markets and RPM

- **"Common-agency game"**
  - Each platform offers a non-linear tariff $T(q)$ to one out of many perfectly competitive retail agents. $T(q)$ is contingent on the market structure, i.e., whether the agent serves one or both platforms, and may or may not include an RPM clause.
  - An agent observes its own offer(s) and then either accepts or rejects
  - If a platform's offer is rejected by the agent, it can make a new offer to a different agent
  - Accepted offers are then observed by everyone
  - Platforms decides whether to be active and then set prices to direct side buyers, while the retail agent(s) set prices to retail buyers.

To fix ideas, you may think of an intrinsic common agency.

Two-sided markets and RPM

Suppose linear (or two-part) tariffs and positive indirect network effects



$$\max_{p_d^i}(p_d^i - c_d)q_d^i + (w^i - c_r)q_r^i$$

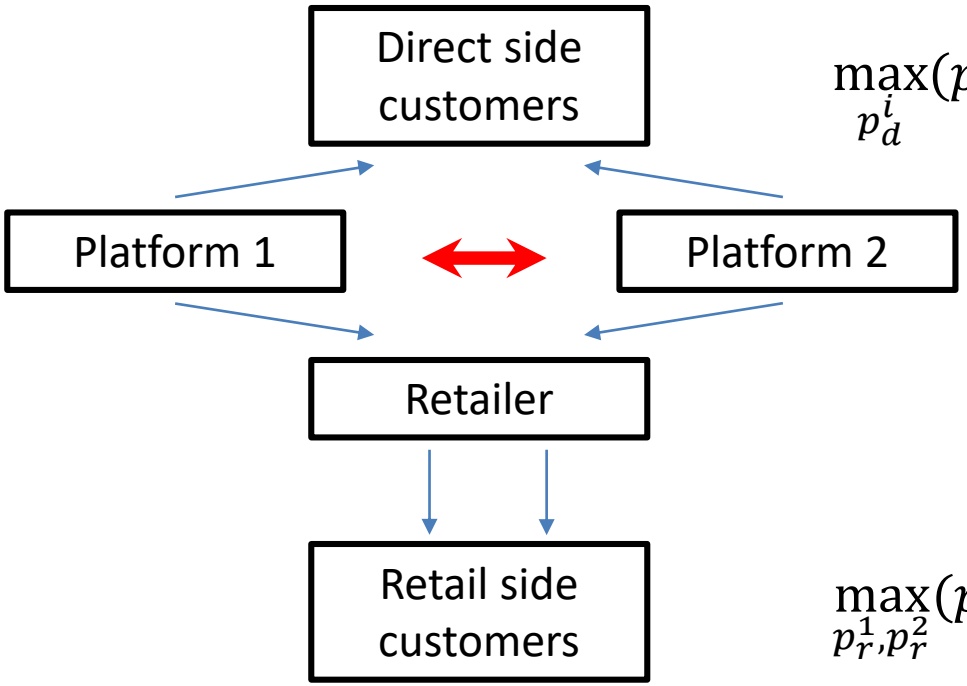
$$\max_{p_r^i}(p_r^i - w^i)q_r^i$$

Two-sided markets and RPM

- **No RPM—too high prices on both sides**
  - $w = c$ is not necessarily optimal
  - $w = c$ causes the platform to ignore retail sales when setting the price to the direct side customers (this calls for $w > c$)
  - $w = c$ causes the retailer to ignore direct sales when setting the retail price (this calls for $w < c$)
  - The "second best" two-part tariff will therefore cause too few sales on both sides of the market
- **RPM solves the problem**
  - Implement max RPM equal to the fully integrated retail price p_r^M, and then squeeze the retailer's margin, $w = p_r^M$
  - Max RPM increases sales on both sides and improves welfare

Two-sided markets and RPM

Suppose linear (or two-part) tariffs and positive indirect network effects



$$\max_{p_d^i}(p_d^i - c_d)q_d^i + (w^i - c_r)q_r^i$$

$$\max_{p_r^1, p_r^2}(p_r^1 - w^1)q_r^1 + (p_r^2 - w^2)q_r^2$$

Two-sided markets and RPM

- **RPM still necessary—but may have to be fixed or min RPM**
  - Without competition: $\overline{p} = p_r^M$ and $w = p_r^M$ is sufficient
  - Introducing direct-side competition will cause direct-side prices to fall
  - Platforms can prevent falling direct side prices by reducing w
  - When w gets low enough, it may be necessary to turn max prices into minimum prices (to keep retail prices from falling)
- **Intuition**
  - High w will cause platforms to compete fiercely on when selling directly—attract more direct side buyers to attract more retail sales
  - Min RPM allows the platforms to set w sufficiently low, to fully dampen direct side competition
  - Min RPM is therefore likely to reduce welfare (because implemented in order to keep prices high on both sides of the market)

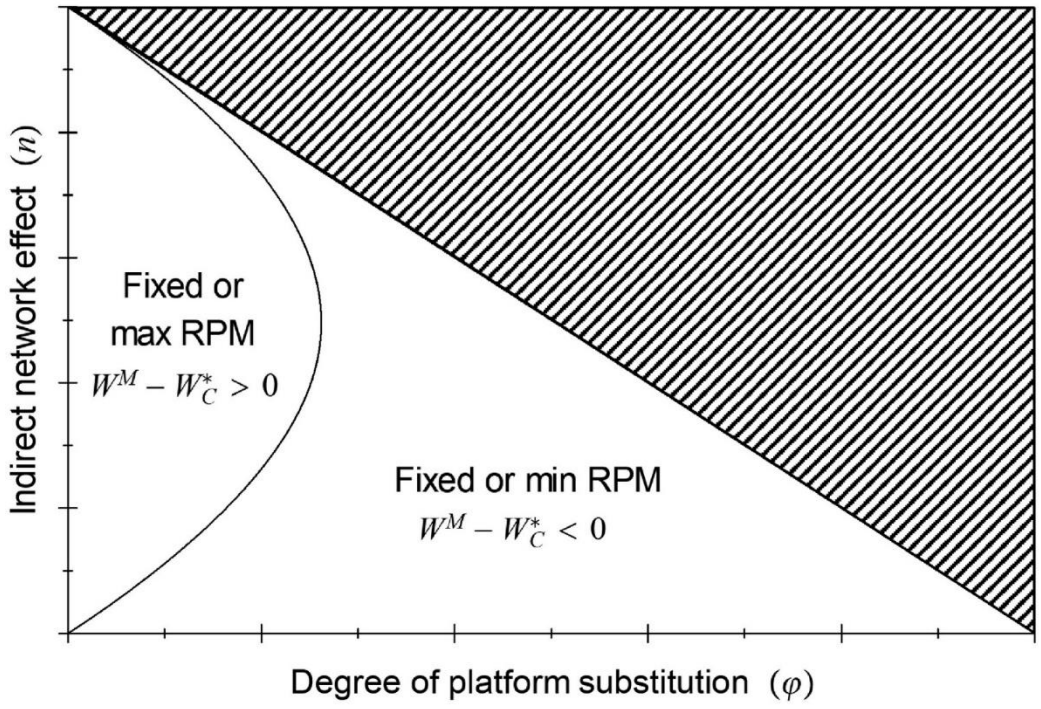
Two-sided markets and RPM

- **Welfare effects of min RPM**
  - Likely to reduce welfare—because implemented in order to keep prices high on both sides of the market in a situation when both sides value each others' participation
  - W/o RPM, as platform competition increases, the platforms would optimally reduce w (to dampen direct side competition), but this will cause the retail price to fall
  - The falling retail prices means that the platforms cannot allow themselves to fully dampen the direct side competition
  - W/o RPM, prices are thus likely to be lower on both sides

Two-sided markets and RPM

Example linear demand system

$$p_s^i = P_s^i(\mathbf{q}_s, \mathbf{q}_{-s}) = 1 - \frac{1}{1+\varphi_s}\left(q_s^i + \varphi_s q_s^j - n_s q_{-s}^i\right)$$



Two-sided markets and RPM

- **Caveat—the platforms' incentives to implement the first-best?**
  - Conclusion so far: The right combination of marginal wholesale prices and RPM clauses gives the fully integrated monopoly outcome
  - But do the platforms have an incentive to offer these contracts?
  - If the (common) retail agent offered the contracts, there would be no question (e.g., two-part tariff + RPM would then give the first-best)
  - So suppose the platforms can sell the rights to offer contracts to the agent (for a price each equal to $\Pi^M/2$)
  - This is equivalent to a "three-part" tariff
  - A combination of upfront payments + quantity discounts + RPM is therefore sufficient (for the platforms) to achieve the first-best

Conclusion

- **Gives some support for the current legal treatment of RPM, which treats min and fixed RPM as worse than max RPM**
- **Maximum RPM (price ceiling) is unlikely to be harmful**
  - The harmful mechanism that has been identified in the literature vanishes once we include non-price competition
  - Positive effects in two-sided markets as they may help platforms to fully internalize network externalities
- **Minimum RPM (price floors) or fixed prices are more likely to be harmful**
  - The traditional service argument does not work vey well if contracts are secretly negotiated
    (or if there is inter-brand competition, Hunold and Muthers 2017)
  - Min RPM can cause harmful effects in two-sided markets, as they may help competing platforms to raise prices on both sides of the market