Reassessing the Robinson-Patman Act

A Theoretical Analysis of Wholesale Price Discrimination

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Executive Summary

This paper reviews the main economic and legal perspectives on the Robinson-Patman Act (RPA), along with the ideological debates that have shaped its interpretation. To formalize the dynamic effects of wholesale price differentials on market structure, the essay develops a theoretical framework based on the Salop circular city model. The analysis suggests that excessive wholesale price differences can exclude disadvantaged competitors and deter potential entrants. These conclusions align with the empirical findings of Asil (2024), who found that discriminatory pricing accelerates retailer exit and, ultimately, undermines consumer welfare. These insights call for a reassessment of RPA enforcement, not as a relic of outdated localism, but as a policy instrument for preserving long-term market competitiveness and protecting consumer welfare.

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1 Background and Policy Debate

There is a long-lasting ongoing war between chain retailers and independent local stores, in which access to low wholesale prices appears to be the key card in the game. At the heart of this conflict lies a fundamental policy question: what role should legislation play in shaping the rules of competition?

For a long time, the question of whether to prohibit wholesale price discrimination has been viewed more as a moral and political issue than from an economic perspective. Sociologists Paul Ingram and Hayagreeva Rao view independent retailers as an institutionalized element of the American economy and a foundation of American democracy [Ingram and Rao, 2004]. Justice Hugo Black viewed retail chains as a threat to civic life and argued that chains squeezed out local retailers, making the local "lose his contribution to local affairs as an independent thinker and executive". These ideological trends borrow the principle behind the Robinson-Patman Act (RPA) of 1936, which prohibits chains from receiving more favorable upstream prices than smaller independent retailers.

Yet despite this moral and ideological foundation, the economic rationale for protecting small retailers has been increasingly challenged. If the law were strictly enforced, we would not have seen the rise and expansion of some titans, like Walmart and Amazon. While some scholars believe that independent stores are the guarantee of market vigor, the Chicago School does not agree. In his famous and influential book *The Antitrust Paradox*, Robert H. Bork presents a key viewpoint of the Chicago School: antitrust enforcement should prioritize consumer welfare over the well-being of competitors [Williamson, 1979]. Given this guideline, some scholars argue that chains negotiating lower wholesale prices can benefit consumers through lower final prices. They also provide an economic perspective to defend the chains, suggesting that large firms may grow not because of monopoly power or collusive conspiracies, but due to efficiency. Citing Demsetz's view, the Robinson-Patman Act often views strategic pricing by large companies, such as volume discounts, as a form of exclusion, but such practices may simply reflect natural competition [Demsetz, 1976]. From this perspective, a strong Robinson-Patman Act is seen as an outdated form of government intervention, reflecting old-fashioned localism. Based on this prevailing economic and legal philosophy, the RPA has been informally repealed for nearly four decades.

However, this consensus has recently come under increasing scrutiny. Although the idea that antitrust should aim to maximize consumer welfare appears appealing, we are not merely consumers. As Tim Wu notes on this topic, "The squeezing of suppliers and the bankrupting of rival retailers extracts costs that may not be measured in terms of lower prices" [Wu, 2018]. This growing awareness calls for a renewed examination of the goals of antitrust enforcement, and in particular, of the Robinson-Patman Act itself. The Chicago School criticizes opposing views for placing too much emphasis on market structure, but some counterexamples have shown that the presence of small businesses within a market is essential for disruptive innovation. For example, companies like Google, Airbnb, and Uber all originated from small innovative teams rather than being incubated within large corporations. The Chicago School views price as the essential signal of consumer welfare, however, this perspective is also questionable, as it is based on a static analysis. In reality, firms are often willing to bear temporary losses in order to pursue long-term strategic goals. Although proponents of this view may argue that short-term losses create financial pressure on companies, they still cannot adequately explain Amazon's pricing strategies, which involved sustained losses in the market over a long period.

This paper takes the position that the Robinson-Patman Act is not merely intended to protect small independent local stores, but rather to safeguard what the Chicago School itself claims to value—consumer welfare. Although allowing wholesale price discrimination may appear to save consumers money, it can actually harm us in more subtle and less visible ways. To more rigorously explore this possibility, I construct a simple dynamic model in which chain retailers, by their bargaining power, enjoy lower wholesale prices than their independent counterparts. This cost asymmetry, though superficially efficient, can systematically distort market outcomes. The model highlights two key mechanisms of concern: the competitive exclusion of existing rivals and the deterrence of potential entrants. By formalizing these dynamics, the analysis offers a more grounded understanding of the implications of wholesale price discrimination—moving beyond ideology and anecdote.

2 Model

2.1 Model Setup and Assumptions

In a seminal paper, Salop and Scheffman argue that dominant firms may exclude rivals not by predation but by raising their costs [Salop and Scheffman, 1983]. This strategy is particularly relevant in markets where chain retailers bargain for lower input prices, while independent stores purchase the same goods at higher wholesale prices. Even absent explicit coordination, such upstream pricing asymmetries create cost advantages.

To formalize these dynamics, I construct a dynamic spatial model using the Salop circular city framework [Salop, 1979]. Consider a unit-length circle where consumers are uniformly distributed. Consumers face total costs equal to the posted price plus a linear transportation cost. All consumers have a reservation value normalized to 1 and purchase only if the total cost does not exceed this amount. Two incumbent firms operate in the market: a chain retailer C located at position 0 with marginal wholesale cost c_C, and an independent store I located at position $\frac{1}{2}$ with a higher marginal cost $c_I > c_C$, reflect maximal differentiation in the Salop model.

The market unfolds as an infinitely repeated game starting from period $t = 0$, with a common discounting $\delta \in (0, 1)$. In each period, firms simultaneously set prices higher than their marginal cost. Firms accumulate reserves R_i^t based on discounted profits, with $R_i^{t+1} = R_i^t + \delta^t \pi_i^t$. The single period profit is $\pi_i^t = (p_i^t - c_i) D_i^t - F_i$, where F_i is the fixed cost of firm i paid for each period. I assume that firms exit permanently once they exhaust reserves.

2.2 Competitive Exclusion through Cost Asymmetry

Before exploring strategic pricing, it is useful to analyze the Bertrand-Nash equilibrium when the chain and the independent store set prices to maximize their profits. In this scenario, each firm chooses its price, taking the rival's price as given. Solving the first-order conditions yields the following equilibrium prices:

$$p_C^* = \frac{t}{2} + \frac{2c_C + c_I}{3}, \quad p_I^* = \frac{t}{2} + \frac{c_C + 2c_I}{3},$$

and corresponding market shares:

$$D_C^* = \frac{1}{2} + \frac{c_I - c_C}{3t}, \quad D_I^* = \frac{1}{2} - \frac{c_I - c_C}{3t}.$$

The price gap $p_I^* - p_C^* = (c_I - c_C)/3$ directly reflects the underlying cost asymmetry, with the higher-cost independent store pricing above the chains and losing market share accordingly. This equilibrium implies that cost advantages yield proportional gains in price and demand. As $c_I - c_C$ increases, the competitive pressure on the independent store exacerbates. When the gap becomes sufficiently large, the demand for the independent store drops to zero; that is, the chain stores completely crowd out the independent store. The condition for the survival of the independent store is

$$c_I - c_C < \frac{3t}{2} \text{ and } F_I \leq \frac{(3t + 2(c_C - c_I))^2}{36t}.$$

Given this condition, a larger wholesale cost gap requires the independent store to have a lower fixed cost in order to survive. In contrast, higher transportation costs t allow greater cost asymmetries to exist and enable independent stores with higher fixed costs to remain viable. In this sense, t softens price competition and acts as a protective buffer for the independent store.

We now examine how strategic pricing by the chain retailer may exacerbate exclusion. The exclusionary power of cost advantage becomes clearer when the chain retailer sets its price equal to marginal cost. This forces the independent store to respond with a lower price, shrinking its demand. When the gap between the wholesale costs of the two firms is large enough, the current period profit of the independent store can be negative. The resulting profit loss per period is

$$L = F_I - \frac{(t+2(c_C-c_I))^2}{16t} > 0, \text{ when } \max\left(\frac{t-4\sqrt{tF_I}}{2}, 0\right) < c_I - c_C < \frac{t}{2},$$

This loss occurs under a condition of a reasonable demand range. When the fixed cost of the independent store satisfies $F_I \leq \frac{t}{16}$, there is still a range in which the firm can survive, specifically, when $c_I - c_C \leq (t-4\sqrt{tF_I})/2$. However, if $F_I > \frac{t}{16}$, any positive cost difference results in a loss, making survival impossible. Additionally, increasing transportation costs can expand the effective range limit of demand and delay exit, and reduce the intensity of losses when the firm operates under unfavorable conditions. That is, the increase in transportation costs t increases consumers' sensitivity to location differences, allowing independent stores to retain some market share even when they face a cost disadvantage. Exit comes once cumulative discounted losses exceed the initial reserve, and the exit time T satisfies

$$L \cdot \frac{1-\delta^T}{1-\delta} \geq R_I^0.$$

In the dynamic setting, the chain retailer can adopt a strategy by pricing at a cost over multiple periods to force rival exit. Although this sacrifices its short-run profit, it allows the chains to monopolize the market in the long run. With a sufficiently high discount factor δ, the present value of future monopoly profits can justify this strategy.

2.3 Entry Barriers under Cost Disadvantage

Cost asymmetries not only exclude existing competitors but also deter entry. Easterbrook (1985) criticized the "inhospitality tradition" in traditional antitrust enforcement and argued that monopolies are self-destructive, as profitable monopoly pricing will eventually attract new competitors, making court intervention look unnecessary [Easterbrook, 1985]. However, we do not live in a frictionless world, and entry is costly in practice due to sunk investments in capital, marketing, and logistics.

Consider a potential entrant E with marginal cost $c_E > c_C$. In a symmetric three-firm spatial configuration on the circle, entry is profitable only if

$$t \geq \max\left\{\frac{3(2c_E-c_I-c_C)}{5}, \frac{3c_E-c_I-c_C}{5}\right\} \text{ and } F_E \leq \frac{(5t-(3c_E-c_I-c_C))^2}{225t}.$$

This implies that a greater cost disadvantage requires the entrant to achieve a higher degree of product differentiation and imposes the need for a lower fixed cost to enter the market. However, in markets shaped by sufficiently large cost asymmetries, entry may remain unattractive without regulatory intervention to restore competitive parity. For example, if $5t = 3c_E - c_I - c_C$, the entry would only be profitable if the fixed cost F is zero, a highly unrealistic condition in the real world.

3 Conclusion and Policy Implications

Given the analysis above, we can see that wholesale price discrimination, while seemingly efficient, can distort the market by facilitating the exclusion of independent retailers and deterring potential entrants. As Baumol et al. proposed, what matters is not the price or the number of incumbents, but rather whether there are barriers to entry and exit [Baumol et al., 1983]. I agree with this view and am concerned that wholesale price discrimination may chill the market. This concern coincides with Asil's (2024) empirical finding that discriminatory pricing, through its impact on market structure, ultimately harms consumers, even when retail prices decline at the beginning [Asil, 2024]. Both our theoretical conclusions and her empirical evidence recall the need to reevaluate Robinson-Patman enforcement through both dynamic and structural lenses. Now is the time to revisit RPA as a tool and use it in a more careful way to consider the cost differences and product differences in the market to determine whether wholesale prices are within a reasonable range. In this way, reasonable wholesale price differences can be allowed, and excessive discrimination should be prohibited to ensure that the market structure is dynamic and sustainable, so as to protect the welfare of consumers in the long run.

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Appendix

A.1. Static Equilibrium under Asymmetric Costs

Let the marginal consumer $x \in [0, \frac{1}{2}]$ be indifferent between buying from firm C or I. The indifference condition is:

$$p_C + tx = p_I + t\left(\frac{1}{2} - x\right) \Rightarrow x = \frac{p_I - p_C + t/2}{2t}$$

Demand for each firm is then:

$$D_C = 2x = \frac{t/2 + (p_I - p_C)}{t}, \quad D_I = 1 - D_C = \frac{t/2 - (p_I - p_C)}{t}$$

Each firm maximizes profit given its rival's price. Profits are:

$$\pi_C = (p_C - c_C) \cdot D_C - F_C, \quad \pi_I = (p_I - c_I) \cdot D_I - F_I$$

Taking the first-order condition for firm I:

$$\frac{d\pi_I}{dp_I} = \frac{\frac{t}{2} + p_C + c_I - 2p_I}{t} = 0 \Rightarrow p_I = \frac{t/2 + p_C + c_I}{2}$$

Similarly, for firm C:

$$p_C = \frac{t/2 + p_I + c_C}{2}$$

Solving the system gives equilibrium prices:

$$p_C^* = \frac{t}{2} + \frac{2c_C + c_I}{3}, \quad p_I^* = \frac{t}{2} + \frac{c_C + 2c_I}{3}$$

Thus, the price difference is:

$$p_I^* - p_C^* = \frac{c_I - c_C}{3}$$

Substituting into the demand equation yields equilibrium market shares:

$$D_C^* = \frac{1}{2} + \frac{c_I - c_C}{3t}, \quad D_I^* = \frac{1}{2} - \frac{c_I - c_C}{3t}$$

To ensure $D_I^* > 0$, we require:

$$c_I - c_C < \frac{3t}{2}$$

Firm I's profit at equilibrium is:

$$\pi_I = \frac{1}{36t}\left[3t + 2(c_C - c_I)\right]^2 - F_I$$

Hence, the necessary and sufficient condition for the long-term existence of independent stores is:

$$c_I - c_C < \frac{3t}{2} \text{ and } F_I \leq \frac{(3t + 2(c_C - c_I))^2}{36t}$$

Let $\Delta c = c_I - c_C$. Then:

$$F_{\text{critical}} = \frac{(3t - 2\Delta c)^2}{36t}$$

Partial derivative w.r.t. Δc:

$$\frac{\partial F_{\text{critical}}}{\partial \Delta c} = \frac{-(3t - 2\Delta c)}{9t} < 0 \quad \text{if } \Delta c < \frac{3t}{2}$$

Partial derivative w.r.t. t:

$$\frac{\partial F_{\text{critical}}}{\partial t} = \frac{1}{4} - \frac{\Delta c^2}{9t^2} > 0 \quad \text{if } \Delta c < \frac{3t}{2}$$

A.2. Competitive Exclusion through Cost Asymmetry

Assume the chain retailer sets $p_C = c_C$. The independent store's best response becomes:

$$p_I = \frac{t/2 + c_C + c_I}{2}$$

Demand for firm I is:

$$D_I = \frac{t/2 - (p_I - p_C)}{t} = \frac{t - 2(c_I - c_C)}{4t}$$

To ensure $D_I > 0$, we require:

$$c_I - c_C < \frac{t}{2}$$

Compare with the equilibrium market shares without the chain setting a strategic price:

$$D_I - D_I^* = \frac{t - 2(c_I - c_C)}{4t} - \left(\frac{1}{2} - \frac{c_I - c_C}{3t}\right) = -\frac{3t + 2(c_I - c_C)}{12t} < 0$$

Its profit is:

$$\pi_I = (p_I - c_I) \cdot D_I - F_I = \left(\frac{t/2 + c_C - c_I}{2}\right) \cdot \frac{t - 2(c_I - c_C)}{4t} - F_I = \frac{(t - 2(c_I - c_C))^2}{16t} - F_I$$

The profit of the independent store is negative when:

$$\pi_I = \frac{(t - 2(c_I - c_C))^2}{16t} - F_I < 0 \implies \frac{(t - 2(c_I - c_C))^2}{16t} < F_I$$

Let $\Delta c = c_I - c_C$. The inequality becomes:

$$\frac{(t - 2\Delta c)^2}{16t} < F_I \Rightarrow (t - 2\Delta c)^2 < 16tF_I$$

Solve:

$$4(\Delta c)^2 - 4t\Delta c + t^2 - 16tF_I = 0$$

Thus, the roots are:

$$\Delta c = \frac{t \pm 4\sqrt{tF_I}}{2}$$

Hence, the conditions under which independent stores lose money under chain store strategic pricing are:

$$\begin{cases} \frac{t - 4\sqrt{tF_I}}{2} < c_I - c_C < \frac{t}{2} & \text{if} \quad F_I \leq \frac{t}{16} \\ 0 < c_I - c_C < \frac{t}{2} & \text{if} \quad F_I > \frac{t}{16} \end{cases}$$

Let the one-period loss be:

$$L = F_I - \frac{(t + 2(c_C - c_I))^2}{16t} > 0, \quad \text{when } \max\left(\frac{t - 4\sqrt{tF_I}}{2}, 0\right) < c_I - c_C < \frac{t}{2}$$

Partial derivative w.r.t. t:

$$\frac{\partial L}{\partial t} = -\frac{1}{16} + \frac{\Delta c^2}{4t^2}$$

Under the constraint $0 < \Delta c < \frac{t}{2}$:

$$\Delta c < \frac{t}{2} \implies \Delta c^2 < \frac{t^2}{4} \implies \frac{\Delta c^2}{4t^2} < \frac{1}{16}$$

Hence,

$$\frac{\partial L}{\partial t} < 0$$

Firm I exits if cumulative discounted losses exceed its initial reserve R_I^0:

$$\sum_{t=1}^{T} \delta^{t-1} L = L \cdot \frac{1 - \delta^T}{1 - \delta} \geq R_I^0$$

A.3. Entry Barriers under Cost Disadvantage

Consider a circular city of perimeter 1, with three evenly spaced firms: Chain Store C, Independent Store I, and Entrant E.

Let the entrant be located between firms C and I. The marginal consumers on both sides of E are indifferent at:

$$x = \frac{p_I - p_E + t/3}{2t}, \quad y = \frac{p_C - p_E + t/3}{2t}$$

Thus, demand for firm E is:

$$D_E = x + y = \frac{p_I + p_C - 2p_E + \frac{2t}{3}}{2t}$$

Similarly:

$$D_I = \frac{p_E + p_C - 2p_I + \frac{2t}{3}}{2t}, \quad D_C = \frac{p_E + p_I - 2p_C + \frac{2t}{3}}{2t}$$

Each firm maximizes:

$$\pi_i = (p_i - c_i)D_i - F_i, \quad i \in \{C, I, E\}$$

First-order conditions:

- Firm E:

$$p_I + p_C - 4p_E + \frac{2t}{3} + 2c_E = 0$$

- Firm I:

$$p_E + p_C - 4p_I + \frac{2t}{3} + 2c_I = 0$$

- Firm C:

$$p_E + p_I - 4p_C + \frac{2t}{3} + 2c_C = 0$$

Solving the system yields equilibrium prices:

$$p_E^* = \frac{t}{3} + \frac{3c_E + c_I + c_C}{5}$$
$$p_I^* = \frac{t}{3} + \frac{c_E + 3c_I + c_C}{5}$$
$$p_C^* = \frac{t}{3} + \frac{c_E + c_I + 3c_C}{5}$$

To ensure $D_E^* > 0$, we require:

$$D_E^* = \frac{p_I^* + p_C^* - 2p_E^* + \frac{2t}{3}}{2t} \geq 0 \implies 5t - 3c_E + c_I + c_C \geq 0 \implies t \geq \frac{3c_E - c_I - c_C}{5}$$

For the entrant E, the equilibrium price must exceed marginal cost:

$$p_E^* = \frac{t}{3} + \frac{3c_E + c_I + c_C}{5} \geq c_E \implies t \geq \frac{3(2c_E - c_I - c_C)}{5}$$

Equilibrium profits:

$$\pi_i^* = \frac{(5t - 3c_i + c_j + c_k)^2}{225t} - F_i, \quad i, j, k \in \{C, I, E\}$$

Entry occurs if:

$$t \geq \max\left\{\frac{3(2c_E - c_I - c_C)}{5}, \frac{3c_E - c_I - c_C}{5}\right\} \text{ and } F_E \leq \frac{(5t - (3c_E - c_I - c_C))^2}{225t}$$