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Generosity, Access Frictions, and the Win–Win Region in Pharmaceutical Markets (*)

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Abstract: This paper develops a stylized theoretical framework in which a Pharmacy Benefit Manager (PBM) strategically chooses an access enabling strategy (AES) that reduces financial, administrative, and psychological barriers to prescription drug use. Higher AES lowers patient cost sharing, relaxes utilization frictions, and increases treatment uptake. Pharmaceutical firms set prices taking AES as given, while the PBM balances enrollee satisfaction, drug spending, and administrative costs; a regulator may further shape AES through actuarial value requirements, out of pocket maximum rules, or access based incentives. The model yields a central result: there exists a win–win region in which increasing AES simultaneously raises pharmaceutical profits, raises PBM profits, and improves welfare. This region emerges because access enabling investments expand demand, reduce transaction costs, and generate medical offsets that can outweigh higher drug spending. However, gains for patients, physicians, payers, and manufacturers do not necessarily extend to hospitals. By reducing avoidable complications and shifting care from high margin inpatient services to lower margin outpatient settings, higher AES can erode hospital profits. The framework provides a tractable way to analyze access as an endogenous strategic variable and clarifies when incentives for payers and manufacturers align—or conflict—with hospital financial viability.

Keywords: Healthcare, Generosity, Access Frictions, Pharmaceutical Markets, Hospitals.

INTRODUCTION

Pharmaceutical access decisions increasingly mediate not only drug prices, but also adoption patterns, downstream medical spending, and surplus distribution across manufacturers, payers, and providers. In many markets, these decisions are shaped by pharmacy benefit managers (PBMs), whose formulary rules, benefit designs, and utilization management tools influence whether high-cost therapies translate into realized system-level value. While existing research has extensively examined pricing, rebates, and coverage restrictions, less attention has been paid to situations in which intermediaries strategically invest in access-enabling features—such as cost offsets or adherence support—that increase pharmaceutical utilization while potentially reducing downstream medical expenditures. This paper develops a stylized theoretical framework to analyze such access-enabling strategies as endogenous strategic choices, rather than institutional constraints, and explores the conditions under which they generate mutual gains for manufacturers and payers while redistributing surplus away from other parts of the health-care system.

* I am grateful to Helen Kantarelis for insightful brainstorming. All substantive modeling choices, interpretations, and conclusions are the author's own.

A large literature has examined behavioral frictions and insurance design [Baicker et al. (2011); Cutler et al. (2000); Finkelstein (2007)], value-based insurance and drug coverage [(Choudhry et al. (2011); Chernew et al. (2007); (Goldman 2006)], PBMs and pricing [(Sood et al. (2017); Ho et al. (2017); HHS OIG (2014)], and hospital margins and cross-subsidies [(Ginsburg (2010); Cooper et al. (2019)]. Yet these strands are typically studied in isolation.

This paper integrates them by developing a simple theoretical framework in which a PBM chooses a generosity parameter G that reduces both financial and nonfinancial barriers to accessing prescription drugs. Generosity lowers patient cost-sharing, relaxes administrative frictions, and increases treatment uptake. Pharmaceutical firms set prices taking generosity as given, while a regulator may constrain or incentivize generosity through actuarial value requirements, out-of-pocket maximums, or access-based bonuses.

The central insight is that generosity can create a win–win region in which increasing simultaneously raises pharmaceutical profits, raises PBM profits, and increases welfare. This region emerges because generosity expands demand, reduces frictions, and can lower transaction costs for the PBM while improving patient access. However, what benefits patients, physicians, PBMs, and manufacturers does not necessarily benefit hospitals. Because hospitals earn their highest margins on acute, complication-driven inpatient episodes, rising generosity reduces the volume of these profitable admissions and shifts care toward lower-margin outpatient services. The model therefore highlights a fundamental tension: policies that move the system closer to the efficient frontier for patients and payers may erode the financial stability of hospitals.

This framework provides a tractable way to analyze how policy interventions that shift generosity affect access, profits, and welfare across the pharmaceutical supply chain. It also clarifies the conditions under which incentives for payers and manufacturers are aligned—or misaligned—with hospital finances.

A. Pharma and Patient Assistance Programs

Generosity in healthcare, specifically in the form of pharmaceutical manufacturer-sponsored patient assistance programs (PAPs) and donations to co-pay charities, largely drives profits up for pharmaceutical companies while often driving overall drug prices and premiums up for the healthcare system.

While these programs appear to be charitable, studies[†] suggest they function as a business strategy to maintain high list prices and increase market share, particularly for expensive, specialty drugs. In more detail, these studies have concluded the following:

a. Observed Impact on Pharma Profits.[‡]

- Increased Revenue via High Prices: PAPs allow manufacturers to maintain or increase high list prices for drugs while covering the patient's out-of-pocket costs, ensuring the patient remains on the drug.

[†] Among others, Congressional Research Service (2022), and Philipson et al. (2021).

[‡] See among others, U.S. Department of Justice (2026), and Arnall Golden Gregory LLP (2024).

- High Return on Investment (ROI): Industry analyses suggest that manufacturer donations to co-pay charities can generate returns many times larger than the initial outlay, by preserving high list prices and expanding volume.
- Tax Benefits: Donations to charities are tax-deductible, with U.S. tax code allowing companies to deduct up to twice the cost of donated goods.
- Market Control: These programs often act as a barrier to lower-cost generics or competitors by making the brand-name drug's co-pay $0 for the patient, reducing their price sensitivity.

b. Impact on Drug Prices.[§]

- Masking Price Increases: By covering patient co-pays, manufacturers can raise the sticker price of drugs without causing patients to abandon the medication.
- Increased System Costs: Health experts indicate that these programs drive up premium prices for everyone, as insurers and taxpayers end up paying the inflated list price.
- Reduced Competition: By locking patients into a brand-name, high-cost medication via copay assistance, manufacturers prevent patients from switching to cheaper alternatives.

c. Exceptions and Regulatory Context.[**]

- Regulatory Scrutiny: The U.S. Office of Inspector General (OIG) has investigated these practices, as they can violate federal anti-kickback statutes.
- "Generous" Model Exception: A new CMS[††] initiative starting in 2026, the GENEROUS model (Generating cost Reductions for U.S. Medicaid), aims to reduce drug costs by having manufacturers offer lower prices based on international rates. This is a government-driven negotiation, not a manufacturer-sponsored charity, and is intended to drive prices down for Medicaid.

In summary, manufacturer-driven "generosity" (PAPs) is generally a mechanism designed to protect and increase profits by keeping drug prices high.

B. Payers

For healthcare payers (insurers, employers, and government programs), "generosity" is a double-edged sword that typically drives profits down in the private sector but is being leveraged to drive costs down in the public sector starting in 2026. More specifically, entities may rely on some options such as the following:

[§] See among others, Duggan et al. (2010), and Morton et al. (2017).
[**] U.S. Department of Health and Human Services (2014).
[††] Centers for Medicare & Medicaid Services (CMS) (2026).

a. Manufacturer "Generosity" (PAPs/Coupons). When pharmaceutical companies are "generous" with co-pay assistance, it generally hurts the profitability of private payers (insurers and employers). As a result, they respond as follows:

- Bypassing Cost Controls: Payers use tiered formularies to steer patients toward cheaper generics. Manufacturer coupons make expensive brand-name drugs free for the patient, removing their incentive to choose the cheaper option.
- Higher System Costs: Because the insurer must still pay the remainder of the high list price, manufacturer assistance is estimated to increase negotiated net prices by up to 8% and annual spending by up to $1 billion in certain drug categories.
- Payer Counter-Tactics[‡‡] : To protect profits, many payers have implemented "accumulator" or "maximizer" programs. These allow the payer to collect the manufacturer's assistance funds without counting them toward the patient's deductible, essentially "double-dipping" to delay when the payer's own coverage kicks in.

b. Pharmacy Benefit Managers (PBMs). For PBMs—who manage drug benefits for payers—manufacturer generosity can actually drive profits up via rebate retention. PBMs often negotiate rebates based on a percentage of the drug's list price. When manufacturers keep list prices high (supported by assistance programs), the total rebate value increases. PBMs may retain a portion of these rebates as profit rather than passing them all back to the insurer.

c. Government Payers (Medicaid/Medicare). For the government, "generosity" is shifting toward mandatory cost-cutting models by utilizing the following:

- The GENEROUS Model [Centers for Medicare & Medicaid Services (2026)], aims to drive government costs down. It allows CMS to negotiate lower prices for Medicaid based on international rates.
- Anti-Kickback Restrictions: Federal law prohibits manufacturers from offering co-pay coupons to Medicare or Medicaid beneficiaries, as this is viewed as an illegal incentive to choose more expensive drugs at the taxpayers' expense.

d. Payer "Generosity" Toward Providers. If the term refers to how much a payer covers (payer generosity), the impact is:

- Payer Profits Down: High reimbursement rates to hospitals and doctors decrease the payer's margin.

[‡‡] Avalere Health (2025).

- Provider Profits Up: Hospitals, especially for-profit systems, see increased profitability when they serve patients with "generous" private insurance compared to lower-paying Medicaid patients.

Colorado Health Institute (2023) has made available for public consumption a flow chart, displayed below as Figure 1, which is useful because it shows the interconnections between consumers, insurance, pharma and pharmacy. It does not show though how generosity affects profits (pharma, PBM, hospitals) and the wellbeing of patients and doctors, a task we undertake in this paper.

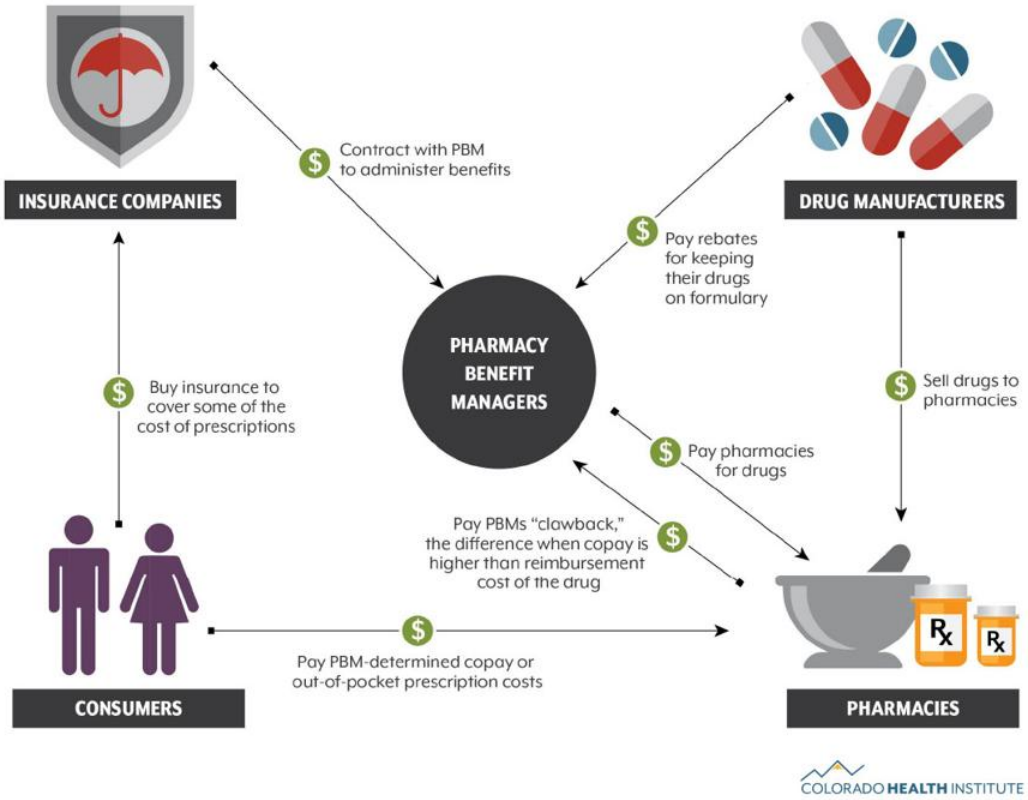

Figure 1: The role of Pharmacy Benefit Managers

A MODEL INCLUSIVE OF PHARMA, PBMS, PATIENTS / DOCTORS, AND HOSPITALS

This paper reframes the strategic decision variable not as "generosity" in the colloquial or altruistic sense, but as a **value facilitation or access-enabling strategy (AES)** — a construct widely recognized in marketing, health economics, and value-based healthcare. In this framework, payers and Pharmacy Benefit Managers (PBMs) invest in reducing financial, administrative, and psychological barriers to treatment adoption. This aligns with established marketing theory in which firms enhance value realization by lowering customer frictions, reducing transaction costs, and improving access to core offerings (Palmatier et al., 2006; Porter, 2010; Garrison et al., 2017).

Within this broader construct, we retain the term **"generosity"** as a convenient shorthand for the *degree of access facilitation* embedded in the PBM's strategy. Generosity, as used here, does not imply altruism or unilateral giving without expectation of return (Fehr & Schmidt, 1999; Grant & Berg, 2011).

Instead, it represents a **strategic, incentive-compatible mechanism** through which PBMs and manufacturers reduce frictions to increase treatment uptake, improve adherence, and shift system-level value.[§§]

Theoretical Foundations and Related Literature

The concept of access-enabling strategy (AES) draws from several established theoretical domains. First, **value-based healthcare** emphasizes the alignment of incentives across stakeholders to improve outcomes while reducing avoidable costs (Porter, 2010). AES fits within this paradigm by lowering barriers to clinically appropriate treatments, thereby shifting utilization toward higher-value care.

Second, **transaction cost economics** provides a foundation for understanding how reductions in administrative and psychological frictions function as cost-reducing mechanisms that facilitate exchange PBMs and manufacturers strategically deploy AES to reduce implicit access costs, increase adherence, and stabilize demand (Fehr & Schmidt, 1999; Williamson,1985.)

Third, **relationship marketing and value facilitation** highlight how firms invest in reducing customer effort and improving access to offerings to enhance long-term value realization (Palmatier et al., 2006; Kotler et al., 2008). In pharmaceutical markets, AES can be interpreted as a form of value facilitation that increases the likelihood that patients and physicians can realize the therapeutic value of a drug.

Fourth, **signaling theory** suggests that firms may use access-enhancing mechanisms to signal commitment to patient outcomes, reduce uncertainty, and differentiate themselves in markets characterized by information asymmetry (Connelly et al., 2011).

This integrated theoretical foundation supports the use of AES as the primary construct in the model. The term "generosity" is retained as a descriptive label for the operationalization of AES within PBM decision-making, but the theoretical grounding rests on established marketing and economic frameworks rather than altruistic interpretations of generosity.

Model Setup and Definition of the Access-Enabling Strategy (AES)

For tractability, each pharmaceutical firm is modeled as a monopolist over its product, consistent with the molecule-specific pricing structure in U.S. drug markets. The PBM acts as the effective monopsonistic purchaser of drugs on behalf of enrollees, while hospitals are treated as providers with heterogeneous margins across service lines, reflecting real-world variation in market power, reimbursement rates, and cross-subsidization patterns.

The PBM's strategic decision variable is the access-enabling strategy (AES), denoted G. AES captures the extent to which the PBM reduces financial, administrative, and psychological frictions that patients and physicians face when accessing prescription drugs. Higher values of Gcorrespond to lower cost-sharing, fewer prior authorization requirements,

[§§] In this paper, "generosity" refers to the composite access-enhancing features of an insurance or PBM design — including lower cost-sharing, reduced administrative burdens, and simplified access pathways. It is not used in the behavioral-economics sense of altruistic giving, but as a strategic access-enabling mechanism consistent with value facilitation in marketing.

simplified access pathways, and reduced implicit burdens. In this framework, the term "generosity" is retained as a descriptive shorthand for the operationalization of AES, but the construct itself is grounded in value facilitation and access-reduction mechanisms rather than altruistic giving.

A central assumption of the framework is that the marginal reduction in downstream medical costs generated by a higher access-enabling strategy (AES) exceeds the marginal increase in drug spending. This assumption is consistent with empirical evidence showing that reductions in financial and administrative frictions can improve adherence, reduce avoidable complications, and lower total medical spending in several therapeutic areas.

Demand, Pricing, and PBM Optimization

1. **Generosity (G) causes higher profits (TS) for PBMs and pharma; in general, improves total welfare[***]:** patients face fewer frictions and lower effective prices, physicians face fewer administrative burdens and fewer "treatment barriers", adherence improves, avoidable complications fall. Generosity reduces deadweight loss and expands the feasible set of treatments - the system moves closer to the efficient frontier - which is fully consistent with the literature on behavioral frictions, insurance design, and medical offsets.
2. **Generosity causes Lower Psychological & Transaction Costs (PT)** for it reduces paperwork, prior authorization friction, patient anxiety about affordability, physician moral distress, delays in treatment, and administrative back-and-forth. In other words, PT(G) is decreasing in G.

There are several well-documented real-world cases where **more generous drug coverage *lowers* total medical spending**, because the savings from avoided hospitalizations, complications, and acute events outweigh the extra drug spending. Summarized below are six real word examples, offered as illustrations:

1. **Statins** for high-risk cardiovascular patients in conjunction with commercial insurance and Medicare advantage plans. Plans that reduced or eliminated copays for statins saw, higher adherence, fewer heart attacks and strokes, fewer hospitalizations and ER visits, and lower total medical spending, even though drug spending rose. As it is well known, the cost of a statin is tiny compared to the cost of myocardial infarction (Drag spending is small but medical savings are large since $20K to $40K acute events are avoided, a textbook case of generosity is profit-increasing for the payer.
2. **Diabetes medications (especially insulin)** in conjunction with Medicaid expansions, Affordable Care Act (ACA) marketplace plans, and employer plans. When copays for insulin and GLP-1s were reduced (where Glucagon-Like Peptide-1 receptor agonists, are medications that mimic a natural gut hormone to help control blood sugar, reduce appetite, and slow digestion), adherence improved, rates of diabetic ketoacidosis (DKA) fell, hospitalizations for hyperglycemia dropped, and total

[***] See among others, Choudhry, N. K, et al. (2011), Goldman et al. (2006, 2007), Chernew et al (2007), and Fendrick, et al. (2012).

spending often fell despite higher drug outlays. As is well known, a single DKA hospitalization can cost $15K to $30k and a month of insulin costs a fraction of that. Such generosity measures caused an increase in marginal drug costs and a decrease in marginal medical costs in turn causing payer profit to rise.

3. **Heart failure** medications (ACE inhibitors, ARBs, beta-blockers) in conjunction with Medicare Part D and Medicare Advantage. Plans that lowered cost-sharing for guideline-recommended heart failure drugs saw, better medication persistence, fewer hospitalizations for heart failure, lower mortality, and lower total cost of care. Heart failure hospitalizations are extremely expensive, drugs are cheap.
4. **Antidepressants and antipsychotics** in conjunction with Medicaid and integrated health systems (e.g., Kaiser). It lower copays for antidepressants and antipsychotics led to, Higher adherence, Fewer psychiatric crises, Fewer inpatient psychiatric admissions, and Lower total spending. Undoubtedly, psychiatric hospitalizations are costly but, medications are relatively inexpensive.
5. **Asthma controller medications** in conjunction with **e**mployer plans and Medicaid. When inhaled corticosteroids had lower copays, adherence increased, ER visits and hospitalizations for asthma exacerbations fell, and **t**otal spending decreased. A $30 inhaler can prevent a $5,000–$10,000 hospitalization.
6. **HIV antiretroviral therapy (ART)** in conjunction with Medicaid, Ryan White programs, ACA expansions. More generous coverage for ART led to higher adherence, lower viral loads, fewer opportunistic infections, dramatically fewer hospitalizations, and lower total medical spending. ART is expensive, but opportunistic infections and hospitalizations are *more* expensive. As we know, ART significantly increases medical savings by preventing severe illness, reducing hospitalizations, and averting new infections, leading to substantial long-term cost reductions for individuals, healthcare systems, and even employers, despite the high upfront cost of medications, especially when generic options are used. Early treatment keeps people healthier, lowers overall healthcare spending, and avoids the much higher costs associated with advanced HIV/AIDS, making it economically beneficial in the long run.

   ART leads to savings:

- Reduces Healthcare Utilization: People on ART with viral suppression have much lower healthcare costs than those not on treatment, as they need fewer hospitalizations and emergency services.
- Prevents Transmission: Effective treatment (U=U, undetectable equals untransmittable) stops new infections, saving the massive lifetime costs of treating another person with HIV, estimated in the hundreds of thousands of dollars per averted infection.
- Improves Workforce Productivity: By keeping people healthy and in the workforce, ART reduces absenteeism and turnover, benefiting employers.
- Long-Term Cost-Effectiveness: While ART is expensive, studies show that expanding access to treatment pays for itself over time through savings from averted hospitalizations and infections. Significant factors are Medication Costs (brand-name

ART drugs are costly, but generic versions significantly reduce these expenses, creating even greater savings), and adherence matters (consistent adherence to ART is crucial for effectiveness and achieving maximum cost savings.) In essence, treating HIV early with ART shifts costs from acute, expensive interventions (like managing AIDS) to a more manageable, lifelong medication regimen, resulting in overall savings and better health outcomes.

But, what is good for patients and payers is not always good for hospitals. Rising generosity may lower hospital profits (K). Consider the following mechanisms:

- **Mechanism 1: Fewer complications cause fewer high-margin admissions:** Hospitals often earn the highest margins on, readmissions, complications, emergency visits, and acute exacerbations. Generosity though improves adherence and reduces these events. So, hospitals lose revenue from "avoidable illness." This is *exactly* what insurers and policymakers want — but it reduces K.
- **Mechanism 2: Shift from inpatient to outpatient:** Generosity often encourages earlier treatment, preventive care, and medication adherence. These shift care away from high-margin inpatient services toward lower-margin outpatient services. Hence, hospitals lose revenue even though patients gain welfare.
- **Mechanism 3: Value-based contracts penalize hospitals for poor outcomes:** Generosity improves outcomes. Although better outcomes will cause fewer penalties, it may not necessarily be good for hospitals: many value-based contracts reduce payments when utilization falls and hospitals earn less because they deliver fewer billable services.
- **Mechanism 4: Bargaining power shifts:** If generosity is insurer-driven (e.g., Medicare Advantage, commercial plans), insurers gain leverage, hospitals face tighter reimbursement, and margins compress (easily observable in today's market.)
- **Mechanism 5: Hospitals lose "cross-subsidy" revenue:** Hospitals often rely on profitable service lines (cardiology, orthopedics) to subsidize unprofitable ones. Generosity reduces the volume of profitable acute episodes, weakening the cross-subsidy structure.

Figure 2 represents a multi-axis conceptual map. **Point A** corresponds to a baseline level of generosity (G), with corresponding values of profits for pharma and PBM (TS), psychological and transaction costs (PT), and hospital profits (K). The **arrow from A to B** encodes our core assertion: rising G causes TS to rise and PT as well as K to fall. In more detail:

- TS = Profits realized by pharma and PBM. TS(G) is increasing in G.
- G = Generosity, a structural policy variable that affects demand, effective price ceiling, transaction costs, and patient as well as physician utility. It captures the multi-dimensional nature of U.S. generosity as it relates to actuarial value, network breadth, administrative simplicity, and coverage mandates. In other words, generosity refers to the degree to which a health insurance plan or regulatory framework reduces financial barriers to care—typically measured by how much of total health spending is covered by third parties (insurers, government) rather than

patients. The most widely used metric is actuarial value, which quantifies generosity as the percentage of covered health costs paid by the plan.

- PT = Psychological Costs and Transaction Costs experienced by physicians and patients. PT(G) is decreasing in G.
- K = Profits realized by hospitals. K(G) is decreasing in G.

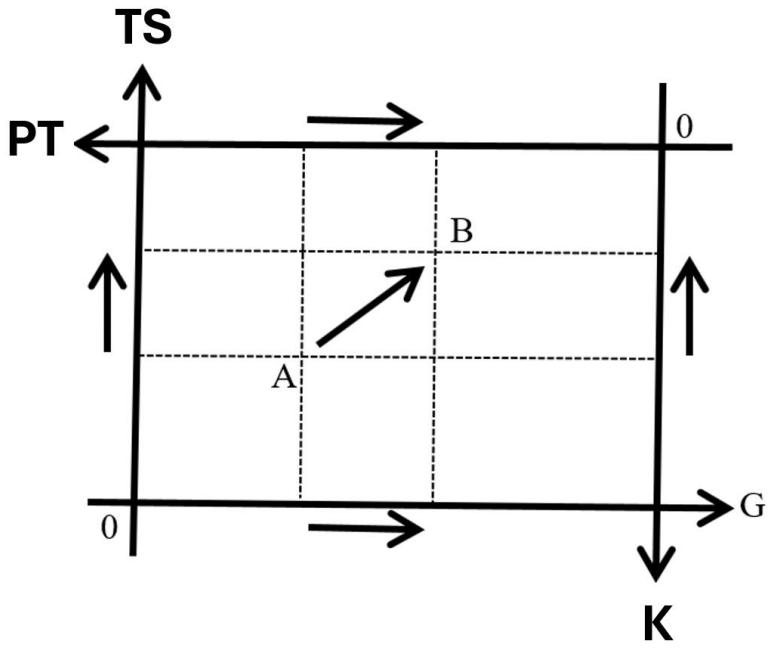

Figure 2: Impact of System-Level Generosity on Pharma and PBM profits (TS), Psychological and Transaction Costs (PT), and Hospital profits (K)

Although insurers are the ultimate financial payers for prescription drugs, PBMs act as the operational payer. They administer the drug benefit, negotiate prices, set copays, manage formularies, and determine the generosity parameter. For modeling purposes, we therefore treat the PBM as the payer whose decisions shape patient access and spending.

As stated above, generosity (G) is a system-level parameter chosen by the PBM that captures the extent to which patients are shielded from both financial and non-financial barriers to accessing prescription drugs. Higher generosity reduces patient copays, lowers administrative and psychological frictions, and increases the ease of obtaining clinically appropriate treatments. Generosity affects copays [$k(G) = (1 - G) \times$ (Reference Price)] and frictional access costs (higher G reduces these implicit burdens). Generosity is thus a composite access-enhancing parameter.

Patient **demand for drug i** depends on the firm's price and the PBM's generosity:

$$Q_j = \alpha - \beta\, p_i + \gamma\, G,$$

where

- $\beta > 0$ measures sensitivity to the actual price and $\gamma > 0$ measures sensitivity to generosity.

This captures two mechanisms: higher generosity lowers the effective price by reducing copays and reduces non-price frictions, which function like an implicit cost. Higher prices reduce quantity demanded and greater generosity increases demand.

Each **pharmaceutical firm**, acting as a monopolist, chooses its price, taking generosity as given. Profit is:

$$\pi_i(G) = (p_i - c)\, Q_i(G)$$

Substituting demand:

$$\pi_i(G) = (p_i - c)\, (\alpha - \beta\, p_i + \gamma\, G)$$

The first-order condition yields the optimal price:

$$p_i^*(G) = (\alpha + \gamma\, G + \beta\, c) \,/\, (2\beta)$$

and quantity

$$Q_i^*(G) = (\alpha + \gamma\, G + \beta\, c) \,/\, (\beta)$$

Higher generosity increases demand and therefore increases the firm's optimal price and profit. For a wide range of parameters, $d\pi_i/dG > 0$.

The **PBM**, acting as a monopsonist intermediary, chooses generosity G (and potentially a steering parameter) to maximize:

$$\pi_P(G) = R - \Sigma_i\, [G\, p_i(G)\, Q_i(G)] - M(G),$$

where

R is premium revenue, $G\, p_i(G)\, Q_i(G)$ is total drug spending, and M(G) is the administrative or regulatory cost of providing generosity. The PBM faces a tradeoff: generosity increases utilization and enrollee satisfaction but also increases drug spending. Generosity may also reduce transaction costs, creating non-linear incentives.

Let **hospitals** provide two broad types of care in conjunction with G: (a) inpatient, acute, high-margin care (complications, exacerbations, emergencies) and (b) outpatient, preventive, lower-margin care. Let

- $I(G)$ = volume of high-margin inpatient episodes,
- $O(G)$ = volume of lower-margin outpatient episodes,
- p_I, p_O = average payments per inpatient and outpatient episode,
- c_I, c_O = average costs per inpatient and outpatient episode.

Assume that G reduces avoidable acute events ($dI/dG < 0$), increases earlier outpatient care ($dO/dG > 0$), and that margins are higher for inpatient than outpatient or

$$(m_I = p_I - c_I \text{ and } m_O = p_O - c_O, \text{ with } m_I > m_O > 0).$$

Hence, hospital profit may be expressed as:

$$K(G) = m_I\, I(G) + m_O\, O(G) \qquad (1)$$

from which we may derive

$$dK/dG = m_I\, (dI/dG) + m_O\, (dO/dG).$$

Because m_I is large and dI/dG is negative, while m_O is small and dO/dG is positive, a sufficient condition for hospital profit to fall with generosity is:

$$m_I \, (dI/dG) > m_O \, (dO/dG).$$

Under this condition, $dK/dG < 0$, which captures the empirical reality that generosity reduces high-margin inpatient episodes more than it increases low-margin outpatient care. Hence, if generosity reduces high-margin inpatient episodes enough, the loss in profitable acute care outweighs the gain from additional low-margin outpatient care, so hospital profit declines as generosity rises. We can tie this directly to mechanisms 1, 2 and 5 stated above:

- Mechanism 1 (fewer complications): ($dI/dG < 0$) captures fewer readmissions and acute exacerbations.
- Mechanism 2 (shift to outpatient): ($dO/dG > 0$) captures more preventive and early-stage care.
- Mechanism 5 (loss of cross-subsidy): the decline in I(G) erodes the high-margin "profit centers" that subsidize other services.

The **regulator** may constrain or incentivize generosity through minimum-generosity requirements, actuarial value (AV) mandates, out-of-pocket maximum rules, and subsidies or penalties tied to access metrics.

A key feature of the model is that the welfare effects of generosity differ from the financial effects on hospitals. Welfare increases with generosity because G reduces financial and non-financial frictions, improves adherence, lowers avoidable complications, and generates medical offsets that reduce total system costs. Formally, W(G) rises when the marginal reduction in frictions and avoidable medical spending exceeds the marginal increase in drug spending and administrative costs. By contrast, hospital profit K(G) decreases with generosity because G reduces high-margin inpatient episodes more than it increases low-margin outpatient care. Thus, it is entirely possible—and central to the model—that ($dW/dG > 0$) even while ($dK/dG < 0$). This asymmetry is what gives rise to the win–win generosity region: a range of G in which pharmaceutical firms and PBMs gain, patients and physicians face fewer barriers, and social welfare improves, even though hospital margins decline. The regulator's objective is social welfare (W), defined as

$$W(G) = (\text{Total Patient Utility}) - (\text{Financial and Administrative Costs}). \quad (2)$$

Because generosity reduces financial and nonfinancial frictions, improves adherence, and lowers avoidable complications, welfare often increases in G over a substantial region. A central result of the model is the existence of an interval in which ($d\pi_i/dG > 0$) for each pharmaceutical firm i, and ($d\pi_P/dG > 0$) for the PBM, while welfare W(G) is also increasing in generosity. In this win–win generosity region, higher generosity simultaneously raises pharma profits, PBM profits, and social welfare. By contrast, hospital profit K(G) is decreasing in generosity over a wide range of parameter values, reflecting the reduction in high-margin acute episodes and the shift toward lower-margin outpatient care. The existence of the win–win region comes directly from the structure of the welfare function W(G) and the hospital profit function K(G) (functions 1 and 2 above). The W(G) function may be expressed, alternatively, as

$$W(G) = U(G) - C_{drug}(G) - C_{admin}(G),$$

where:

- U(G) patient utility increases because psychological and transaction costs fall
- $C_{drug}(G)$ increases with generosity
- $C_{admin}(G)$ may fall (fewer denials, fewer prior authorizations).

The derivative is:

$$dW/dG = U'(G) - C'_{drug}(G) - C'_{admin}(G)$$

The win-win region is the interval where:

- $U'(G)$ is large (big medical offsets, big psychological and transaction cost reductions),
- $C'_{drug}(G)$ is moderate,
- $C'_{admin}(G)$ is negative or small.

So, $dW/dG > 0$, even though $dK/dG < 0$, because hospital profit depends on:

$K(G) = m_I I(G) + m_O O(G)$ and I(G) falls sharply, O(G) rises mildly, $m_I \gg m_O$.

Hence,

$$dK/dG = m_I I'(G) + m_O O'(G) < 0.$$

Consider Graph 3 based on hypothetical numerical values for G, TS, PT, and K. The curves are conceptual and reflect model predictions rather than empirical estimates. TS(G) is increasing due to higher demand and pricing power. PT(G) is decreasing as generosity lowers copays, paperwork, and treatment barriers. K(G) declines because generosity reduces high-margin inpatient volume and shifts care toward lower-margin outpatient services. The win–win region is defined by the interval of G where dTS/dG>0, dPT/dG0, even as dK/dG<0. The region between the two vertical dashed lines at approximately 1.5 and 4 is the win–win generosity region in our model. Why this region qualifies:

- TS (Pharma & PBM profits) is clearly rising throughout this interval,
- PT (Psychological & transaction costs) is falling,
- K (Hospital profits) is falling — but that's expected, and part of the model's tension.

G	TS	PT	K
0	10	30	40
1	12	25	35
2	15	21	28
3	19	18	20
4	24	16	12
5	30	15	5

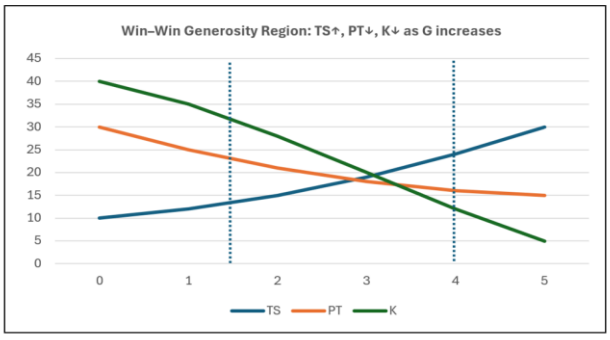

Figure 3: Win-Win Generosity Region (when 1.5 ≤ G ≤4)

Most importantly, this is the range where generosity improves welfare while aligning incentives for manufacturers and payers. Below the left boundary of G ≅ 1.5, psychological

and transaction costs dominate. Generosity is too low to unlock adherence, access, or medical offsets. Above the right boundary of $G \cong 4$, drug spending may rise faster than medical savings, PBM margins may compress, and welfare gains may flatten.

CONCLUSION

This paper develops a formal framework for analyzing access-enabling strategies in pharmaceutical markets, showing how PBM-chosen investments can shape drug adoption, medical spending, and surplus allocation even when all actors behave strategically and without altruistic motives. By modeling access features as endogenous choices rather than fixed institutional parameters, the analysis highlights a set of incentive trade-offs that are obscured in conventional treatments of pharmaceutical pricing and coverage. In particular, the framework identifies conditions under which access-enabling strategies expand total surplus and create joint gains for manufacturers and payers, while simultaneously imposing losses on hospitals through reduced utilization of downstream services.

The model yields a central result: there exists a win–win generosity region in which increasing generosity simultaneously raises pharmaceutical profits, raises PBM profits, and increases welfare. This region arises because generosity expands demand, reduces frictions, and can lower transaction costs for the PBM while improving patient access. These findings are consistent with empirical evidence documenting medical offsets, improved adherence, and reductions in avoidable complications when cost-sharing falls.

However, the same forces that benefit patients, physicians, PBMs, and manufacturers do not necessarily benefit hospitals. Because hospitals earn their highest margins on acute, complication-driven inpatient episodes, generosity reduces the volume of these profitable admissions. It also shifts care toward lower-margin outpatient services and strengthens payer bargaining power. Under plausible conditions, hospital profit is decreasing in generosity. This asymmetry highlights an important policy tension: expanding generosity may improve welfare while simultaneously weakening hospital finances, especially for systems reliant on cross-subsidies from high-margin service lines.

Several natural extensions could enrich the framework, including endogenizing hospital–payer bargaining, allowing generosity to evolve dynamically as PBMs learn about medical offsets, introducing PBM competition, incorporating heterogeneous patient types, modeling multiple therapeutic classes with cross-elasticities, and specifying explicit regulatory instruments such as actuarial value (AV) mandates, out-of-pocket maximum rules, or access-based bonuses.

Overall, the framework clarifies how generosity shapes incentives across the pharmaceutical supply chain and provides a foundation for analyzing policy interventions that shift generosity. It also underscores the need for complementary reforms in hospital payment systems if policymakers wish to expand generosity without destabilizing provider finances.

More broadly, the analysis illustrates how access-oriented investments can function as strategic instruments in vertically complex health-care markets, complementing existing work on value-based health care, contracting, and market design. Treating access conditions as decision variables rather than background institutions opens new directions for both theoretical and empirical research, including extensions that incorporate competition

among PBMs, heterogeneous patient populations, or dynamic investment incentives. While the framework abstracts from many real-world complexities, it clarifies a fundamental mechanism through which access-enabling strategies can simultaneously improve system-level efficiency and redistribute surplus—underscoring the importance of careful theoretical analysis when evaluating policy and managerial responses to rising pharmaceutical spending.

REFERENCES

Arnall Golden Gregory LLP (2024), Teva Pharmaceuticals to Pay $450 Million to Resolve Alleged Kickbacks Through Copay Assistance Foundations, Health Care Law Update, Arnall Golden Gregory LLP, available at: (agg.com in Bing).

Avalere Health (2025), State Copay Accumulator Bans Now Affect at Least 17% of Commercial Lives, Avalere Health Advisory, available at: (avalere.com in Bing).

Baicker, K., & Goldman, D. (2011), "Patient Cost-Sharing and Healthcare Spending Growth." Journal of Economic Perspectives, Vol. 25, no. 2, pp. 47–68.

Banks, Dwayne A., (2004), "Transaction cost economics and its applications to health services research", Health Services Research, 39(4), 1209–1230.

Centers for Medicare & Medicaid Services (2026), GENEROUS (GENErating Cost Reductions for U.S. Medicaid) Model, Center for Medicare & Medicaid Innovation, U.S. Department of Health and Human Services, available at: (cms.gov in Bing)

Chernew, Michael E.; Rosen, Allison B.; and Fendrick, A. Mark, (2007), "Value-Based Insurance Design", Health Affairs, 26(Suppl 2), w195–w203.

Choudhry, N. K., et al. (2011). "Full Coverage for Preventive Medications after Myocardial Infarction." New England Journal of Medicine. (statins, copay elimination, and reduced events).

Colorado Health Institute (2023), Annual Report, Colorado Health Institute, available at: (coloradohealthinstitute.org in Bing)

Congressional Research Service (2022). Prescription Drug Discount Cards and Manufacturer Copayment Coupons, < https://www.congress.gov/crs-product/R44264>.

Connelly, Brian L.; Certo, S. Trevis; Ireland, R. Duane; and Reutzel, Christopher R, (2011), "Signaling theory: A review and assessment", Journal of Management, 37(1), 39–67.

Cooper Z., Craig S.V., Gaynor M., & Van Reenen J. (2019), "The price ain't right? Hospital prices and health spending on the privately insured", Quarterly Journal of Economics, 134(1): 51-107.

Cutler, David M., & Richard J. Zeckhauser (2000), "The anatomy of health insurance", Handbook of Health Economics, Vol. 1, Elsevier, pp 563-643.

Duggan, Mark, & Fiona Scott Morton (2010), "The Effect of Medicare Part D on Pharmaceutical Prices and Utilization", American Economic Review, 100 (1): 590–607.

Einav, Liran, Amy Finkelstein, & Maria Polyakova (2018), "Private Provision of Social Insurance: Drug-Specific Price Elasticities and Cost Sharing in Medicare Part D", American Economic Journal: Economic Policy, 10 (3): 122–53.

Federal Trade Commission (2024), FTC Sues Prescription Drug Middlemen for Artificially Inflating Insulin Drug Prices, Federal Trade Commission, https://www.ftc.gov .

Fehr, Ernst; and Schmidt, Klaus M., (1999), "A theory of fairness, competition, and cooperation", Quarterly Journal of Economics, 114(3), 817–868.

Fendrick, A Mark , Jenifer J Martin, Alison E Weiss (2012), Value-Based Insurance Design: More Health at Any Price, Health Services Research, < https://pmc.ncbi.nlm.nih.gov/articles/PMC3393011/ >.

Finkelstein, Amy (2007), "The Aggregate Effects of Health Insurance: Evidence from the Introduction of Medicare", The Quarterly Journal of Economics, Volume 122, Issue 1, February 2007, pp 1–37.

Garthwaite, Craig; and Scott Morton, Fiona, (2017), "Drug pricing and pharmaceutical industry profits", Journal of Economic Perspectives, 31(2), 47–68.

Garrison, Louis P. Jr.; Towse, Adrian; Briggs, Andrew; de Pouvourville, Gérard; Grueger, Jan; Mohr, Peter E.; Severens, Johan L.; Siviero, Paola; Sleeper, Margaret; and Towse, Adrian. (2017), "Value-based pricing for emerging gene therapies: Economic considerations and challenges", Value in Health, 20(5), 634–640.

Ginsburg P.B. (2010), "Wide variation in hospital and physician payment rates evidence of provider market power", Research Brief, (16):1-11, PMID: 21117341.

Goldman, D., Joyce, G., & Karaca-Mandic, P. (2006), "Varying Pharmacy Benefits with Clinical Status: The Case of Cholesterol-Lowering Therapy", The American Journal of Managed Care, 12(1), 21-8.

Goldman D.P., Joyce G.F., Zheng Y. (2007), "Prescription drug cost sharing: associations with medication and medical utilization and spending and health", JAMA, Jul 4;298(1): 61-9.

Guardado, José R., (2024), "Competition in PBM markets and vertical integration of insurers with PBMs", American Medical Association Policy Research Perspectives.

Grant, Adam M.; and Berg, Justin M., (2011), "Prosocial motivation at work: When, why, and how making a difference makes a difference", Academy of Management Annals, 5(1), 73–109.

Gray, Charles; Alpert, Abby; and Sood, Neeraj, (2026), "Disadvantaging rivals: Vertical integration in the pharmaceutical market", American Economic Journal: Applied Economics, 18(1), 286–304.

HHS OIG (2014). Special Advisory Bulletin: Pharmaceutical Manufacturer Copayment Coupons. < https://www.ropesgray.com/en/-/media/files/publications/2014/09/20140924_hc_alert.pdf?rev=255a883da86142d3a5c16c7f5c6405df >.

Ho, Kate & Robin S. Lee (2017, "Insurer Competition in Health Care Markets", Econometrica, Mar, 2017, Volume 85, Issue 2, p.379-417.

Kotler, Philip; Shalowitz, Joel; and Stevens, Robert J. (2008), Strategic Marketing for Health Care Organizations: Building a Customer-Driven Health System. San Francisco: Jossey-Bass.

Lakdawalla, Darius & Neeraj Sood (2009), "Innovation and The Welfare Effects of Public Drug Insurance", Journal of Public Economics, Apr 1;93(3-4):541–548.

Larsson, Stefan; Lubkeman, Mark; Clawson, Jennifer; and Lawyer, Peter, (2011), What value-based health care means for pharma, Boston Consulting Group White Paper.

Mattingly, T.J., Ben-Umeh, K.C., Bai, G., Anderson, G.F. (2023), "Pharmacy Benefit Manager Pricing and Spread Pricing for High-Utilization Generic Drugs", JAMA Health Forum, 4(10): e233660, https://jamanetwork.com .

Mattos, R.W. (2025), Understanding Pharmacy Benefit Managers, Spread Pricing, and the Rebate System, Triforta, https://www.triforta.com .

Morton, Scott, F., and Boller, L. (2017). Enabling competition in pharmaceutical markets. Brookings Institution.
< https://www.brookings.edu/articles/enabling-competition-in-pharmaceutical-markets/>.

Palmatier, Robert W.; Dant, Rajiv P.; Grewal, Dhruv; and Evans, Kenneth R, (2006), "Factors influencing the effectiveness of relationship marketing: A meta-analysis", Journal of Marketing, 70(4), 136–153.

Philipson, Tomas J., & Troy Durie (2021), The Patient Impact of Manufacturer Copay Assistance in an Era of Rising Out-of-Pocket Costs, analysis supported by IQVIA data, available at: (valueinhealthjournal.com in Bing)

Porter, M. E. (2010), "What Is Value in Health Care?" New England Journal of Medicine, 363(26), 2477–2481.

Sen, Aditi P.; Kang, So-Yeon; Rashidi, Emaan; Ganguli, Devoja; Anderson, Gerard; Alexander, G. Caleb; and Kesselheim, Aaron S., (2021), "Characteristics of copayment offsets for prescription drugs in the United States", JAMA Internal Medicine, 181(6), 758–764.

Sood N, Shih T, Van Nuys K, Goldman DP (2017), "Follow The Money: The Flow of Funds in the Pharmaceutical Distribution System", Health Affairs
Blog, <https://www.healthaffairs.org/do/10.1377/hblog20170613.060557/full/>.

U.S. Department of Health and Human Services (2014), Office of Inspector General, Manufacturer Safeguards May Not Prevent Copayment Coupon Use for Part D Drugs (Issued on 09/18/2014, Posted on 09/18/2014, Report number: OEI-05-12-0054).

U.S. Department of Justice (2026), OIG settlements and advisory bulletins documenting the strategic use of co-pay charities.
< https://oig.hhs.gov/compliance/alerts/special-advisory-bulletins/ >.

Williamson, Oliver E., (1985), The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting, New York: Free Press.

APPENDIX

Monopolistic versus Monopsonistic Exploitation

This appendix nests the baseline model discussed above in standard monopoly/monopsony theory and clarifies when "generosity" amplifies or disciplines market power. A contrasting mirror to our core theme may emerge: the same structural power that can support a win-win generosity region can also, under different conditions, generate exploitative outcomes on both the monopoly and monopsony sides.

A. Pharmaceutical monopoly exploitation

A.1. Benchmark monopoly pricing in the model:

Given the above pharma monopoly firm structure, the Lerner index at the monopoly optimum is

$$[p^*(G) - c]/p^*(G) = (-1/\varepsilon_{pQ}),$$

where ε_{pQ} is the (negative) price elasticity of demand at $p^*(G)$. Exploitation in the usual sense corresponds to a large Lerner index—high price–cost margins sustained by low demand elasticity.

In this framework, generosity G affects exploitation through two channels (a) *effective elasticity* (higher G shields patients from price, making their perceived elasticity smaller in absolute value, which allows a higher markup) and (b) *demand expansion* (higher G shifts demand out via γG, raising both price and quantity.

Thus, for a given cost c, monopoly exploitation is most severe when:

1. Demand is highly inelastic (clinical necessity, few substitutes, high switching costs).
2. Generosity is high but poorly targeted, so patients are insulated from price without countervailing payer discipline.
3. Entry is blocked (patents, exclusivity, regulatory barriers, or "evergreening" that preserves effective monopoly).

Formally, exploitation is more likely when [p is large, so that $[p^*(G) - c]/p^*(G)$ is high and the welfare loss (deadweight loss) from monopoly pricing grows. A simple welfare comparison makes this explicit. Let the competitive price be $p^C = c$, with quantity $Q^C = \alpha - \beta c + \gamma G$. The deadweight loss from monopoly is

$$Q^C(G) - Q^*(G) = (\alpha - \beta c + \gamma G) / 2$$

which increases in both the markup and the gap between competitive and monopoly quantities. When G raises $p^*(G)$ and lowers effective elasticity, both terms can rise.

A.2. Conditions and real-world illustrations

1. Orphan and specialty drugs:

Conditions: Single manufacturer, strong patent/exclusivity, no close substitutes, high clinical need, and generous coverage (commercial or public) that shields patients from list prices.

Examples: High-priced gene therapies and biologics for rare diseases, where list prices in the hundreds of thousands or millions are sustained by monopoly power plus generous coverage and patient assistance that mute price sensitivity.

2. "Sticker-price plus copay assistance" strategies:

Conditions:

- Manufacturer sets a very high list price.
- Insurers/PBMs use coinsurance or high copays to create patient price sensitivity.
- Manufacturer then offers copay coupons or PAPs that reduce the patient's out-of-pocket to near zero, restoring inelastic demand at the high list price.

Mechanism in the model: Coupons effectively raise G for the brand drug only, lowering the patient's effective price while keeping the insurer's price high. Demand becomes less elastic for that product, allowing a higher monopoly markup and larger $\pi(G)$, while total system costs rise.

3. Hepatitis C and other curative therapies:

Conditions: Short-course, highly effective treatments with few substitutes, strong IP protection, and initially generous coverage.

Mechanism: The combination of clinical indispensability and generous coverage yields very low elasticity; the manufacturer sets a high monopoly price, extracting large surplus from payers while patients face limited direct price exposure.

4. Insulin and legacy biologics (pre-reform):

Conditions: Limited effective competition, complex biologic manufacturing, and benefit designs that often capped patient out-of-pocket while allowing list prices to rise.

Mechanism: As list prices rose, net prices and markups remained high; copay caps and assistance programs kept patient-level elasticity low, enabling sustained monopoly or oligopoly exploitation.

Hence, in all these cases, high G (or drug-specific "generosity" via coupons) plus low elasticity and strong entry barriers allow the monopolist to choose a high $p^*(G)$ that maximizes profit but may reduce welfare once medical offsets and system-wide costs are accounted for.

B. PBM monopsony exploitation

B.1. A simple monopsony structure:

On the "buy side," the PBM is the effective monopsonist over drugs and pharmacy services for its covered lives. To highlight monopsony, suppose the PBM faces an upward-sloping "supply" schedule from manufacturers or pharmacies, summarized by a unit price w(Q) that rises with quantity Q. The PBM's objective (suppressing G for the moment) is

$$\pi_P = R(Q) - w(Q)Q - M,$$

where R(Q) is premium revenue net of non-drug claims and M is administrative cost. The PBM chooses Q to satisfy

$$R'(Q) = ME(Q) \equiv w(Q) + w'(Q)Q,$$

where ME(Q) is marginal expenditure. Under competition, the condition would be $R'(Q) = w(Q)$. The monopsonist internalizes the upward-sloping supply and equates marginal benefit to marginal expenditure, yielding a lower quantity and lower purchase price than in the competitive benchmark.

Define the markdown as

$$(w^C - w^M) / w^C ,$$

where w^C is the competitive price and w^M the monopsony price. In the standard model, the markdown is inversely related to the elasticity of supply η:

$$(w^C - w^M) / w^C = (1/\eta).$$

Low supply elasticity (e.g., small independent pharmacies with few alternatives) allows a large markdown. In our framework, the PBM's problem is richer:

$$\pi_P(G) = R - \Sigma_i G_{pi}(G)Q_i(G) - M(G),$$

but the same logic applies on each "buying margin":

- Against manufacturers: PBM uses formulary placement, prior authorization, and volume guarantees to extract rebates (a form of monopsony discount).
- Against pharmacies: PBM sets reimbursement rates and fees, potentially below competitive levels, especially when pharmacies have limited outside options.

Monopsony exploitation arises when the PBM uses its buyer power to push prices paid to upstream suppliers (manufacturers, pharmacies) below competitive levels without passing the savings through to patients or plan sponsors, instead retaining them as spread or rebate margin.

B.2. Conditions for PBM monopsony exploitation:

Monopsony power is most likely when:

1. High PBM concentration and vertical integration.

A small number of PBMs control most covered lives, often integrated with major insurers and specialty pharmacies. This concentration gives them substantial leverage over both manufacturers and pharmacies, and vertical integration creates incentives to steer volume to affiliated entities and disadvantage rivals.

2. Limited plan and pharmacy outside options.

1. Employers and insurers often must contract with one of a few large PBMs.
2. Independent pharmacies depend heavily on PBM contracts; exit is costly.

Low outside options make the "supply" of pharmacy services to the PBM inelastic, enabling large markdowns.

3. Opaque pricing and spread pricing.

PBMs can charge plan sponsors one price while paying pharmacies a lower price, keeping the "spread" as profit. Empirical work on Medicare Part D and Medicaid managed care has documented substantial spreads on high-utilization generics, consistent with PBMs exercising buyer power over pharmacies and information power over payers. See Mattingly, et al. (2023) and Mattos, (2025).

4. Rebate-driven formulary design.

PBMs negotiate rebates as a percentage of list price; when they retain a portion of these rebates, they have incentives to favor high-list-price, high-rebate drugs over lower-priced alternatives. This is a form of monopsony power over manufacturers that may raise net prices and distort competition, especially if savings are not fully passed through. Recent policy and enforcement attention has focused on whether such practices lessen competition and inflate drug costs.

See Federal Trade Commission (2024).

5. Steering and exclusion.

PBMs can steer prescriptions to affiliated specialty pharmacies and exclude or disadvantage independent pharmacies via network design, reimbursement differentials, and audit practices. This can depress reimbursement to non-affiliated pharmacies below competitive levels, contributing to closures and reduced access in some markets.

Formally, let the PBM's effective purchase price from pharmacies be $w_P(Q)$ and the price charged to plan sponsors be $w_S(Q)$. Spread pricing is $\text{Spread}(Q) = w_S(Q) - w_P(Q) \geq 0$.

Monopsony exploitation corresponds to:

$w_P(Q)$ pushed below the competitive level $w^C(Q)$ because of inelastic pharmacy supply and PBM buyer power; and Spread(Q) large and increasing in Q, with limited pass-through of savings to sponsors or patients.

B.3. Interaction with generosity

In our model, G is chosen by the PBM, so monopsony and generosity interact:

- **Low-G, high-markdown regime.** The PBM keeps generosity low (high patient cost-sharing, high frictions) while using monopsony power to extract rebates and spreads. Patients face barriers; pharmacies and some manufacturers face low net prices; PBM profits are high. Welfare can be low even if drug acquisition costs are reduced.
- **High-G, high-rebate regime.** The PBM raises G (improving access and adherence) but finances this partly by exploiting monopsony power—extracting large rebates and spreads while passing through only part of the savings. In this case, there can still be a win–win region for PBM and pharma (via high list prices and high rebates) while pharmacies and some manufacturers are squeezed.

Mathematically, we can capture PBM monopsony power by letting the effective acquisition price be a function of PBM "buyer effort" b (rebate negotiation, spread pricing, steering):

where $\varrho^{(b)}$ is the rebate/discount rate. PBM profit becomes

$$\pi_P(G,b) = R - \Sigma_i G_{p_i^{net}}(G,b)Q_i(G) - M(G,b),$$

and monopsony exploitation corresponds to high b (large ϱ) with limited pass-through of ϱ to R(premiums) or to G (patient generosity).

B.4. Real-world illustrations of PBM monopsony behavior:

- Spread pricing in Medicaid managed care and Medicare Part D: Studies using Part D data find that PBMs often charge plans substantially more than they reimburse pharmacies for high-utilization generics, keeping the spread as profit—consistent

with monopsony power over pharmacies plus information asymmetry vis-à-vis payers. See Mattingly et al. (2023).

- Independent pharmacy squeeze and closures: Reports and investigations highlight below-cost reimbursement, retroactive fees, and steering to PBM-owned pharmacies as mechanisms that depress independent pharmacy margins and contribute to market exit, especially in rural areas. See Federal Trade Commission (2024).
- Rebate-driven formulary design: Large PBMs have been scrutinized for preferring high-rebate drugs even when lower-priced alternatives exist, suggesting that monopsony power over manufacturers is used to extract rebates that are not fully passed through, potentially raising net prices and distorting competition. See Federal Trade Commission (2024) and Mattos, R.W. (2025).

These behaviors fit naturally into our framework: the PBM is a monopsonist choosing G and exploiting its buyer power b. Depending on parameter values, there can be:

- A socially beneficial use of monopsony power (lower net prices, high pass-through, higher G, higher W(G); or
- A monopsony-exploitation regime (low pass-through, high spreads, distorted formularies, pharmacy exit), where PBM profits rise but welfare and access may fall.

This contrast reinforces the central insight of the model: the same structural forces that enable a win–win generosity region—where increased generosity raises pharmaceutical profits, PBM profits, and social welfare—can, under different conditions, give rise to exploitative outcomes. When market power is exercised without transparency or countervailing discipline, pharmaceutical monopolists may sustain high prices through patient insulation, and PBM monopsonists may extract rebates and spreads without passing savings through. Thus, generosity is not inherently virtuous or harmful—it is a policy lever whose effects depend critically on how monopoly and monopsony power are wielded across the supply chain.