Three Phases of the Pharmacy Benefit Manager Business Model

by
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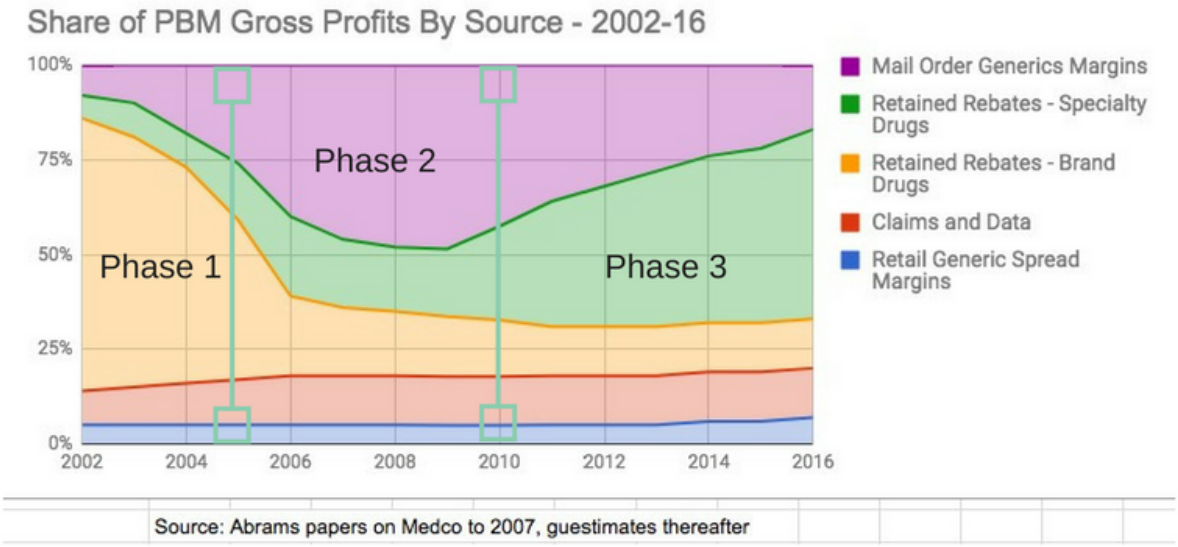
Summary:



We present the case that there has been three distinct phases of the pharmacy benefit manager (PBM) business model over the past 15 years. Each phase has been demarcated by a major shift in the dominant source of gross profits.

These radical shifts in the primary source of gross profits in such a short period of time is unprecedented among Fortune 50 companies. This is indicative of the opaqueness of the PBM business model to their downstream customers -- health care plan sponsors. It is also indicative of PBMs' relative power to negotiate rapid changes in payment streams from upstream suppliers -- the Big 3 retail pharmacies and drug companies. These upstream suppliers and the Big 3 PBMs make up two sides of intermediate market bilateral oligopolies.

It is instructive to understand why PBMs had to recalibrate their business model twice now in the last 15 years. In today's terminology, what "disrupted" this powerful cartel? Our examination of recent history suggests that government regulations and lawsuits have had little impact on PBM decisions to change their business model. Rather, our view is that the disruptors have been "rent-seekers" whose business models were not in alignment with the rest of the cartel. This included the emergence of a vertically integrated PBM in the form of CVS-Caremark and the powerful outsider Walmart with a business model that allowed for the retail pharmacy to be a "loss-leader".

Below is a spreadsheet which summarizes the data sources for our estimation of distribution of PBM gross profits over the past 15 years.

Data Sources on Distribution of PBM Gross Profits				
Source:	Medco 10-Q	Medco 10-Q	Medco 10-K	Guestimate
Date:	3Q04	2Q05	FY07	2016
Retail Generic Spread Margins	2.4%	3.0%	4.2%	7.0%
Claims and Data	11.7%	13.0%	13.1%	13.0%
Retained Rebates - Brand Drugs	71.1%	48.5%	18.6%	13.0%
Retained Rebates - Specialty Drugs	3.0%	3.1%	14.2%	50.0%
Mail Order Generics Margins	11.8%	32.4%	49.9%	17.0%
Total:	100.0%	100.0%	100.0%	100.0%
Rebate Retention Rate:	40.5%	28.1%	18.2%	10.0%
Derivation	Abrams, 04-2005	Abrams 09-2006	Abrams 11-2008	Abrams 2017

Above is a graph of our estimates of PBM gross profits share by source over the past 15 years indicating that there have been 3 distinct periods where a different source dominated.

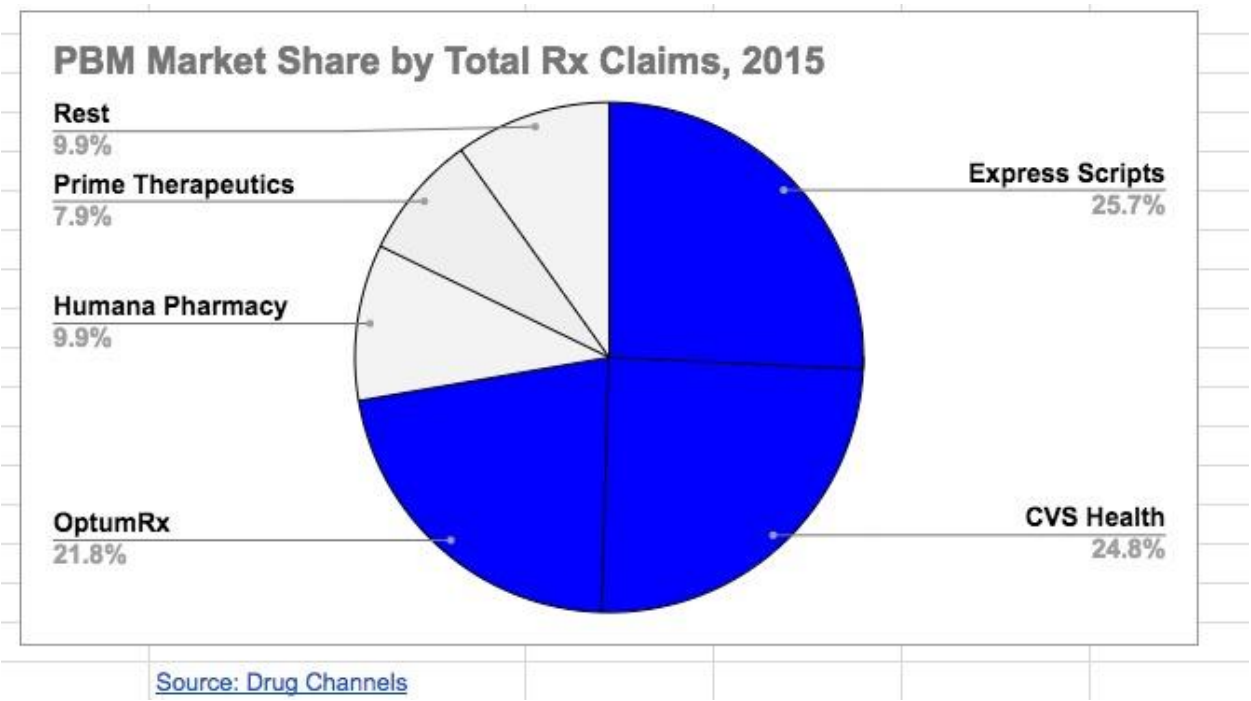
The Pharmacy Benefit Management Business

PBMs provide a bundle of managed care services designed to provide a cost-effective prescription (Rx) drug benefit to plan sponsors and their members. The PBM bundle includes the following list of services:

1. create a retail preferred provider pharmacy network and negotiate brand and generic Rx reimbursements;
2. provide 90-day Rx exclusively from captive mail order pharmacies;
3. provide specialty (high priced and biotech) drugs Rx from captive specialty pharmacies;
4. create a formulary -- a look up table that restricts fills to preferred drugs -- and negotiate rebates with Pharma in return for placement;
5. provide other Rx cost-saving measures such as prior authorization, step-therapy, quantity limits, and co-pays.

Concentration in the PBM Business

The three largest PBMs today -- Express Scripts, CVS Health, and Optum Rx, (known as “The Big 3”) control 73% of the total Rx claims processed the United State in 2015.



Prior to 2013, the Big 3 PBMs were Express Scripts, Medco, and Caremark with a combined concentration similar to today. The concentration in the PBM industry today has been the result of a series of horizontal mergers mistakenly approved by the Federal Trade Commission (FTC).

In 2004, there was a horizontal merger between #3 PBM Caremark and #4 PBM AdvancePCS.

In 2007, there was, in our opinion, a disruptive pro-competitive, vertical merger between #2 retail pharmacy CVS and #3 PBM Caremark. At the time, #1 PBM Express Scripts make a hostile bid for Caremark, but withdrew over concerns over the length of antitrust investigations by the FTC.

In 2012, there was a horizontal merger between the #1 PBM Express Scripts and #2 PBM Medco. In our opinion, this anti-competitive merger was mistakenly approved by the FTC with a one vote majority. The deciding vote was made by a President Obama

appointee, and Harvard Law School classmate, Edith Ramirez. In our opinion, Edith Ramirez has cost the American public $75+ Billion in excessive Rx costs over the past 5 years -- 5 times an estimated inflated 5% of $300 Billion in yearly Rx drug expenses.

In 2013, the largest health insurer in the USA, UnitedHealth Group, ended its long running PBM contract with Medco, now owned by Express Scripts. To handle its own PBM needs, UnitedHealth created an internal unit OptumRx. It grew the unit via taking business away from CVS and Express Scripts and via a 2015 purchase of the tech-savvy PBM Catamaran.

The Pharmacy Benefit Manager Business Model

Since the early 2000s, PBMs have continually come under attack for not acting in the best interest of their clients. We have written a number of papers since 2004 pinpointing an opaque reseller business model as the source of this misalignment.

The PBM reseller business model is in stark contrast to the two other transparent business models used by managed care companies:

1. a self-insurance agency model with 100% pass through of claims expenses to plans accompanied by per-member-per-month (PMPM) management fees;
2. a risk-based insurance model with capitated premiums paid by plans.

The way companies monetize their businesses -- a key component of their overall business model -- is a choice. Often companies sell bundles of products and services and make strategic decisions to monetize one component at a higher margin rate than another component. Disguising gross profit margins by line of business or bundle components is considered a good business practice.

Take, for example, General Motors. It aspires to build great cars, yet a good share of its gross profits comes from car finance. McDonald's aspires to offer customers a great tasting hamburger, yet the company has a higher markup on beverages that it does on food. Best Buy recoups slim margins on consumer electronics products with fat margins on extended warranties.

So why should the opaque PBM reseller business model be judged differently than, say, Best Buy's? Aren't PBMs subject to ERISA laws mandating fiduciary responsibility -- i.e. acting in best interest of clients?

Actually no, according to court cases. It is up to clients of PBMs to hold them accountable for claims that they act in clients best interests. It is up to clients of PBMs to pressure them to offer alternative, more transparent business models.

The Evolution of the PBM Business Model

The PBM business model has evolved considerable over the past 20 years both in terms of the array of managed care services offered and the corresponding distribution of gross profits.

In 2001, PriceWaterhouseCoopers published an excellent business history of PBMs to that date. PBMs started out in the 1980s as computer networking specialists who automated Rx claims processing by connecting retail pharmacy point of sales terminals to back-office health insurance mainframes.

Between 1980-1990, PBMs' prime source of revenue was claims processing fees. PBMs only focus was minimizing claims processing costs, a goal totally in line with the goals of their clients.

The excellent PriceWaterhouseCoopers PBM history did mention that PBMs tried a totally transparent insurance premium business model in the early 1990s. But, they abandoned it after a few years due to losses caused by unexpected mid-year increases in unit drug costs and uncontrollable, Pharma-initiated direct-to-consumer advertising campaigns that greatly increased utilization.

The current PBM business model features five major streams of revenue and gross profits:

1. “spread margins” on top of retailers own margins and lately, direct and indirect reimbursement (DIR) fees, that are collected from retail pharmacies in return for being included in their networks;
2. claims processing and data fees;
3. rebates given by Pharma on small molecule brand drugs in return for preferred status on formularies;
4. rebates give by Pharma on speciality (biotech) drugs in return for preferred status on formularies;
5. profit margins on 90-day generic Rx filled by captive mail order operations.

Since we began following PBMs in 2002, the distribution of gross profits has changed dramatically. These radical shifts in such a short period of time is unprecedented among Fortune 50 companies.

These radical changes are indicative of the opaqueness of the PBM business model to their downstream customers -- health insurance plan sponsors. It is also indicative of the power of the Big 3 PBMs to negotiate rapid changes in payment streams with upstream suppliers -- retail pharmacies and brand drug companies --who tacitly collude with them in two intermediate market bilateral oligopolies.

We see 3 distinct phases of the PBM business model over the past 15 years demarcated by radical shifts in the primary source of gross profits:

1. up to 2005 -- reliance on retained rebates from small molecule brand drugs;
2. 2005 - 2010 -- reliance on mail order generic Rx margins;
3. 2010 - today -- reliance on retained rebates from specialty drugs.

Phase 1: Retained Rebates from Small Molecule Brand Drugs

Phase 1 ended in 2005 after blog posts started appearing which disaggregated the 10-Qs and 10-Ks of Medco's business model revealing outrageous rebate retention rates. There was also a 2004 lawsuit initiated by U.S. Philadelphia District Attorney Patrick Meehan (now Congressman) accusing Medco of switching mail order generic Rx to higher priced rebatable brands. As part of the settlement, Medco agreed to inform plans of gross rebates received and their rebate retention rates.

For 3Q04, we derived with certainty from Medco's 10-Q that 71% of its gross profits came from retained rebates from small molecule brand drugs. By 2Q05, we estimated with certainty that Medco's retained rebate share of gross profits had dropped to 48% with the difference going to their newly found focus on mail order generics.

We have written extensively about the Pharma - PBM bilateral oligopoly that enabled this phase of the PBM business model. Rather than rehash this, we refer to the following papers downloadable for free from our website:

1. Pharmacy Benefit Managers as Conflicted Countervailing Powers , January 2007
2. Who is Best at Negotiating Pharmaceutical Rebates? December 2005
3. PBMs as Bargaining Agents Paper presented at the 80th Annual Western Economic Association Meeting, July 6, 2005, San Francisco

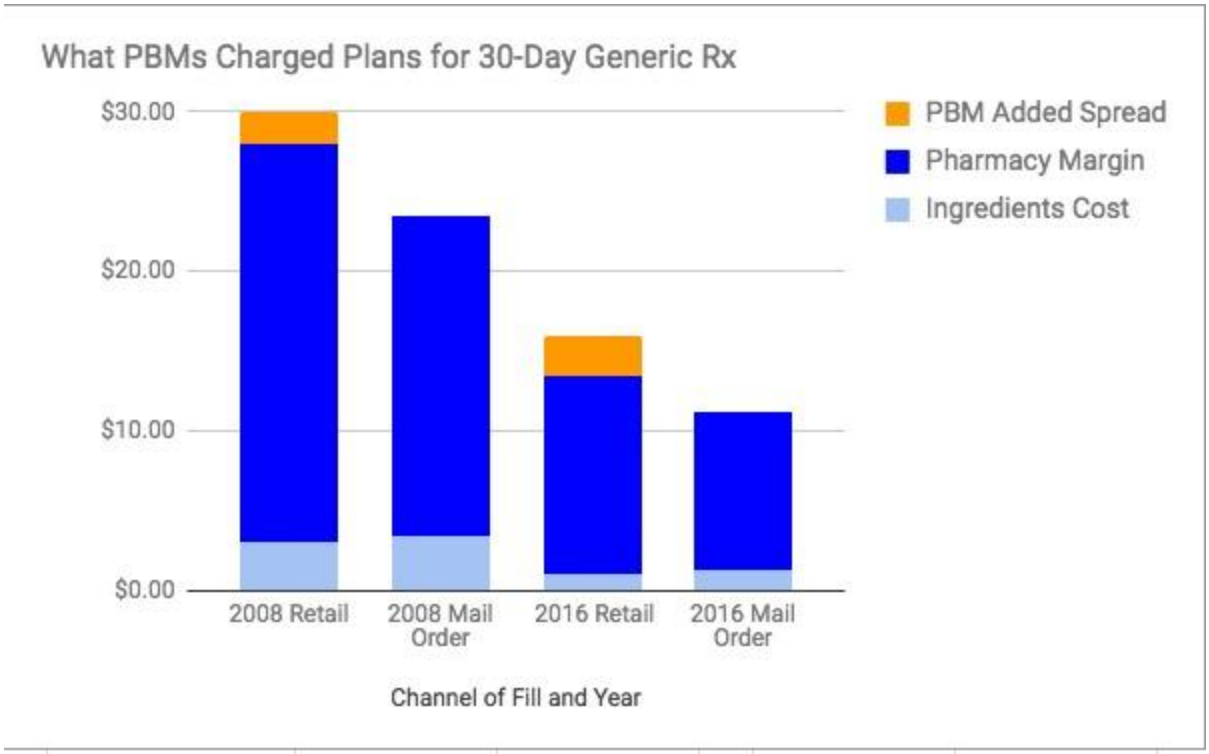
4. PBMs as Bargaining Agents PowerPoint presented at the 80th Annual Western Economic Association, Meeting, July 6, 2005, San Francisco
5. The Effect of Corporate Structure on Formulary Design: The Case of Large Insurance Companies Poster Presentation, ISPOR 10th Annual Meeting, Washington DC, May 2005
6. The Role of Pharmacy Benefit Managers in Formulary Design: Service Providers or Fiduciaries? Journal of Managed Care Pharmacy Vol. 10 No. 4 July/August 2004 pp 359-60

Phase 2: Mail Order Generic Rx Margins

The "interregnum" Phase 2 featured a successful replacement of retained rebates with mail order generic margins. The Big 3 PBMs devised a strategy of tacitly colluding with their counterpart side retail pharmacy oligopoly on the sell-side -- Walgreen, CVS, and Rite-Aid -- to hold up retail generic prices in order to make PBM mail order generics price competitive without margin erosion.

Essentially, it was a scheme to limit price competition between retailers and mail order by "buying off" retail pharmacies with reimbursements for 30-day generic Rx at fat margins in return for ceding 90-day generics Rx to captive mail order operations at lower prices but equally fat margins.

Below is a diagram which illustrates this Phase 2 "hold-up" versus scheme versus the lower prices and margins existing today for generic Rx either at retail or at mail order.



This scheme worked for a couple of years. Our 2003 paper which disaggregated Walgreen's gross profits likely was read by an "outsider" retailer with a different business model that wasn't dependent on fat Rx margins subsidizing the rest of the store. That outsider was Walmart.

Our paper confirmed what they saw -- the fat generic Rx margins of Walgreen, etc. dispensed from a "1,000 square foot hole in the back" (our words) making up for slim margins coming the poorly merchandised, 10,000 square foot "front store".

In 2006, Walmart rolled out a transparent $4 / generic Rx campaign that proved to be the first blow to this hold-up scheme.

The 2007 vertical merger of the pharmacy retailer CVS and the PBM Caremark marked the beginning of the end of the era of fat generic Rx margins.

A fundamental tool of managed care companies are preferred provider networks. They succeed in reduce costs by promising increased volume to preferred providers in return for lower unit prices. In 2006, we found PBM's lack of use of preferred provider networks , along with lack of 90-day Rx at retail, to be obvious signs of the tacit collusion between the Big 3 pharmacy retailers and the Big 3 PBMs.

CVS likely read our 2015 paper confirming their success at beating out competitors in a Medicare Part D precursor program which was agnostic as to whether the Rx was filled at retail or mail order.

At the time of the CVS Caremark merger in 2006, we predicted a "coming preferred provider" war among PBMs. Ten years later "narrow networks" are common. Generic Rx prices and margins are on a downtrend. And, PBMs no longer tout their mail order generics as the key to their profitability.

Phase 3: Retained Rebates From Specialty Drugs

To compensate for declining mail order generic margins, PBMs saw the rising trend of specialty and biotech drugs as a basis for a renewed reliance on retained rebates.

But there are several problems with the goal of deriving a majority of gross profits from specialty drug rebates. Reconstructing how PBMs solved these problems provides insights in two observable phenomena of the era of specialty drug rebates:

1. the so-called deep rebate practice and related gross to net drug price bubble;
2. the trend of growing number of drugs excluded outright from PBM formulary lists.

First, assume that Big 3 PBMs need to derive about the same 50% of gross profits from specialty drug retained rebates as was derived a decade ago from retained rebates from small molecule “rebatable” brands.

This creates a problem in that the Rx volume “basis” for collecting rebates today is a lot less than it was ten years ago. How much less? The Pew Charitable Trust Foundation sponsored a study which found that in 2015 special Rx comprised only 1% of total Rx.

A decade ago, we estimated that about 20% of total Rx filled were “rebatable” brand drugs, i.e. in therapeutic classes with a few other brand drugs that were therapeutic equivalents. So instead of 1:100 specialty Rx to total Rx basis differential, we arrive a 1:20 “rebatable” specialty drug Rx to “rebatable” small molecule brand drug Rx basis differential.

In other words, ten years ago PBMs has 20 times the volume of Rx available to them to use as a basis for generating retained rebates as they do today.

The second constraint that PBMs have today that they did not have a decade ago was the awareness by plans and the public that opaque retained rebate could be a dominant source of gross profits.

Our 2003-8 era papers listed below were rare examples of quantitative articles exposing PBM reliance on retained rebates:

1. Quantifying Medco’s Business Model: An Update November 2008
2. Medco As a Business Model Imperialist July 2008
3. A Tale of Two PBMs: Express Scripts vs. Medco November 2005
4. Quantifying Medco’s Business Model April 2005

5. Estimating the Rebate-Retention Rate of Pharmacy Benefit Managers April 2003

Today, articles critical of PBMs in general, and retained rebates specifically, seem to be at least 10 more numerous than a decade ago. In 2016, CVS Health has even stated publicly on its website that,

> "CVS Caremark was able to reduce trend for clients through... negotiation of rebates, of which more than 90 percent are passed back to clients."

The problem facing PBMs today is how to derive around 50% of gross profits from specialty Rx while maintaining a transparent "reasonable" rebate retention rate at 10% on average?

How have the Big 3 PBMs accomplished this? They are doing by pushing Pharma to increase brand list price at double digit rates all the while opaquely offsetting this by growing "deep discount" rebates. This allows for a majority of gross profits to come from a static, but seemingly reasonable, 10% rebate retention rate.

Below is a screenshot from a Merck memo laying out for all to see its "gross-to-net drug price bubble". Other drug companies are publishing similar data as a way of defending themselves against charges of "double-digit" price-gouging tactics.

MERCK & CO., INC.
Kenilworth, N.J., USA

Pricing Action Transparency Report 2016

We have a long history of making our medicines and vaccines accessible and affordable through responsible pricing practices and industry-leading patient access programs. To help people better understand our pricing practices, we are disclosing information about our price actions in the United States. The table below shows that our average annual net price increases (after taking sales deductions such as rebates, discounts and returns into account) across our portfolio have been in the low to mid-single digits since 2010. Additionally, our average annual discount rate has been steadily increasing over time, reflecting the competitive market for branded medicines and the impact of the Affordable Care Act. In 2016, our gross US sales were reduced by 40.9% as a result of rebates, discounts and returns. This information will be updated annually on our Corporate Responsibility website.

	2010	2011	2012	2013	2014	2015	2016
US Product Portfolio[1] % Change vs. Prior Year[2]							
List Price Change (WAC)[3]	7.4	9.5	9.2	9.6	10.5	9.8	9.6
Net Price[4] Change	3.4	5.1	6.2	5.5	3.7	5.5	5.5

	2010	2011	2012	2013	2014	2015	2016
US Product Portfolio							
Avg. Discount[5] (%)	27.3	28.9	29.9	32.1	37.0	38.2	40.9

Below we build a spreadsheet which “deconstructs” Merck’s bubble for a hypothetical specialty drug. It shows how PBMs can grow retained rebates dollars via a combination of growing rebate percentages while maintaining a “reasonable” rebate retention rate fixed at 10%.

		A Deconstruction of Merck's List to Net Price Bubble						
		Merck's List Price YoY %	7.4%	9.5%	9.2%	9.6%	10.5%	9.8%	9.6%
		Merck's Net Price YoY %	3.4%	5.1%	6.2%	5.5%	3.7%	5.5%	5.5%
		YEAR	2010	2011	2012	2013	2014	2015	2016
1	**PBMs Negotiate With Merck**	**Gross Rebate %**	**27.3%**	**30.2%**	**32.1%**	**34.7%**	**38.7%**	**41.1%**	**43.3%**
2	Merck Reacts	List Price YoY %	7.4%	9.5%	9.2%	9.6%	10.5%	9.8%	9.6%
3	Derived from 2	Resulting Typical List Price $	$ 45,662	$ 50,000	$ 54,600	$ 59,841	$ 66,125	$ 72,605	$ 79,575
4	Derived from 1	Gross Rebate $	$ 12,466	$ 15,100	$ 17,548	$ 20,765	$ 25,590	$ 29,841	$ 34,456
5	Derived from 3 and 4	Net Price To PBMs (after rebates)	$ 33,196	$ 34,900	$ 37,051	$ 39,076	$ 40,535	$ 42,764	$ 45,119
6	Derived from 5	Net Price (after rebates) YoY %	3.4%	5.1%	6.2%	5.5%	3.7%	5.5%	5.5%
7	**Transparent and Fixed**	**PBM Rebate Retention Rate**	**10%**	**10%**	**10%**	**10%**	**10%**	**10%**	**10%**
8	**But this continues to grow**	**PBM Rebate $**	**$ 1,247**	**$ 1,510**	**$ 1,755**	**$ 2,076**	**$ 2,559**	**$ 2,984**	**$ 3,446**
9	**And this continues to grow**	PBM Retained Rebate YoY %		21.1%	16.2%	18.3%	23.2%	16.6%	15.5%
		Cumulative 6 Year Growth							**176%**
10	**And this continues to grow**	Plans Net Price $	$ 34,443	$ 36,410	$ 38,806	$ 41,153	$ 43,094	$ 45,748	$ 48,565
11	**And this continues to grow**	Plans Net Price YoY %		5.7%	6.6%	6.0%	4.7%	6.2%	6.2%

It is clear that Pharma does not like be associated with PBMs attempt to derive a majority of their gross profits from specialty retained rebates all the while posing as "reasonable" agents who have maintained a transparent fixed 10% rebate retention rate these past years.

It is the PBM business model, not the Pharma business model, that is currently stressed. Biosimilars are coming with little gross-to-net wiggle room. To stay competitive with these biosimilars, brands will have to drop list prices and greatly reduce rebates. With falling specialty retained rebates, overall PBM gross profits will fall. They will have to seek a new service to build up new opaque margins or convert finally to a 100% pass through fee-for-service business model.