

# No Correlation Between Increasing Drug Prices and Manufacturer Rebates in Major Drug Categories

---

April 2017

# Executive Summary

---

Visante conducted an analysis of SSR Health data to see if there is a correlation between the prices that drug manufacturers set and the rebates that they negotiate with pharmacy benefit managers (PBMs) working on behalf of employers, unions, health plans, and government programs offering prescription drug coverage. This analysis was commissioned by the Pharmaceutical Care Management Association (PCMA). Visante reviewed gross and net sales for the top 200 self-administered, patent-protected, brand-name drugs in the United States. The research estimated annual rebate levels over the 2011-2016 time period in 23 major drug categories and compared these against manufacturer list price levels and increases for the same categories over the same period.

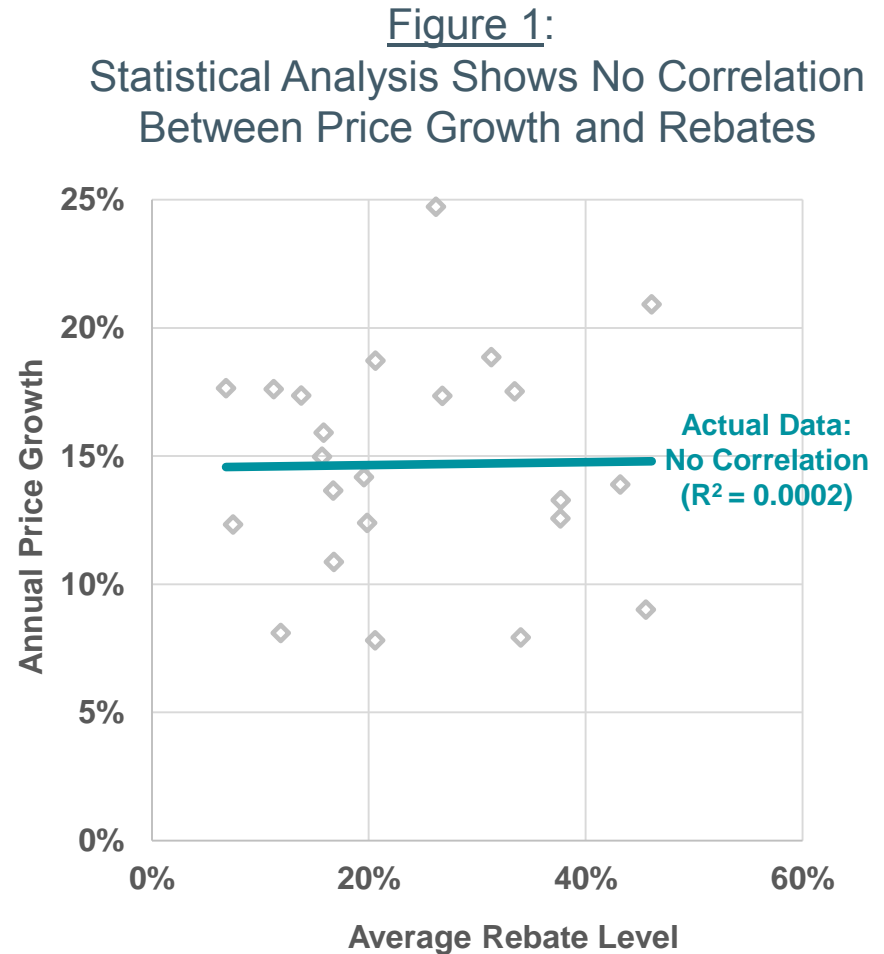
## Major findings:

- There is no correlation between the prices drug companies set and the rebates they negotiate with PBMs.
- There are prominent cases of higher-than-average price increases in drug categories where manufacturers negotiate relatively low rebates.
- There are prominent cases of lower-than-average price increases in drug categories where manufacturers negotiate relatively high rebates.
- Drug companies are increasing prices regardless of rebate levels.
- 90% of rebates are passed through to plans and consumers to reduce their prescription drug benefit costs.

Based on this analysis, it is clear that rebates reduce plan and consumer costs and that there is no causal relationship between the prices manufacturers set and the rebates they negotiate with PBMs.

# Data Show No Correlation Between Brand Drug Rebates and Price Growth In Major Drug Categories

- A statistical analysis shows no correlation between list price increases and average rebate levels in major drug categories.
- Figure 1 plots average price growth against estimated average rebate levels observed during the 2011-2016 time period for 23 major drug categories and classes.
- The flat trend line in Figure 1 suggests that drug prices are increasing regardless of rebate levels across all examined drug categories.
- The trend line's  $R^2$  value equals 0.0002 on a zero to one scale, where zero equals no correlation and one equals perfect correlation.

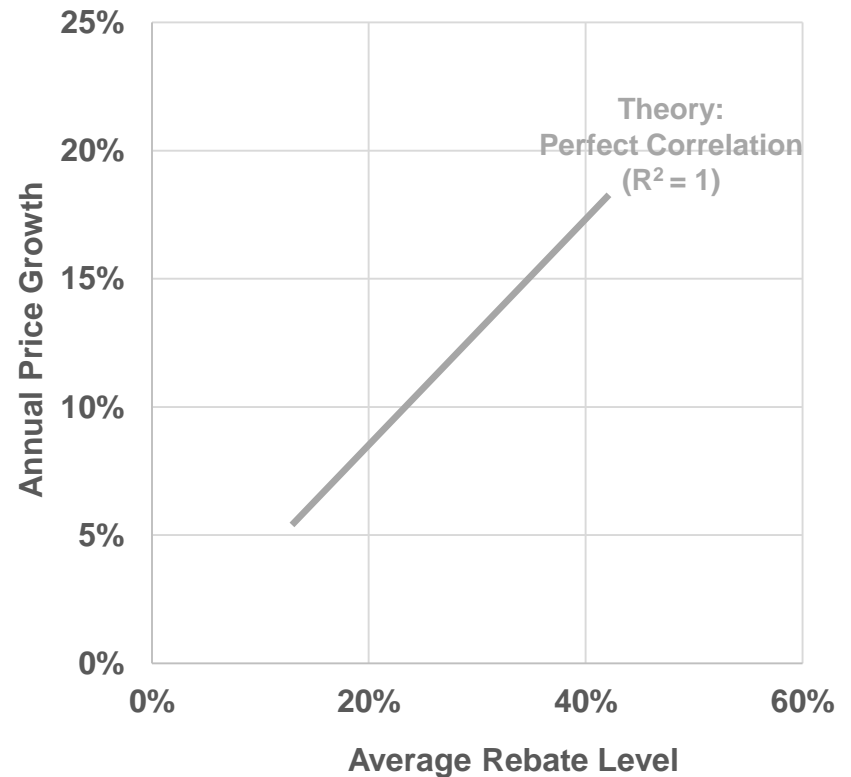


Source: Visante estimates and analysis of SSR Health data, 2017.

# Examining Whether Any Correlation Exists Between Drug Rebates and Price Increases

- Manufacturers have theorized that a correlation exists between drug rebates and price increases.
- Such correlation would be associated with an upward sloping trend line and an  $R^2$  value equal to one (on a zero to one scale).
- One would expect to see higher price growth for drug categories with higher rebates if the theory were valid.
- Likewise, one would expect to see lower price growth for drug categories with lower rebates if the theory were valid.

Figure 2:  
How a Theoretical Correlation Between Price Growth and Rebates Would Look

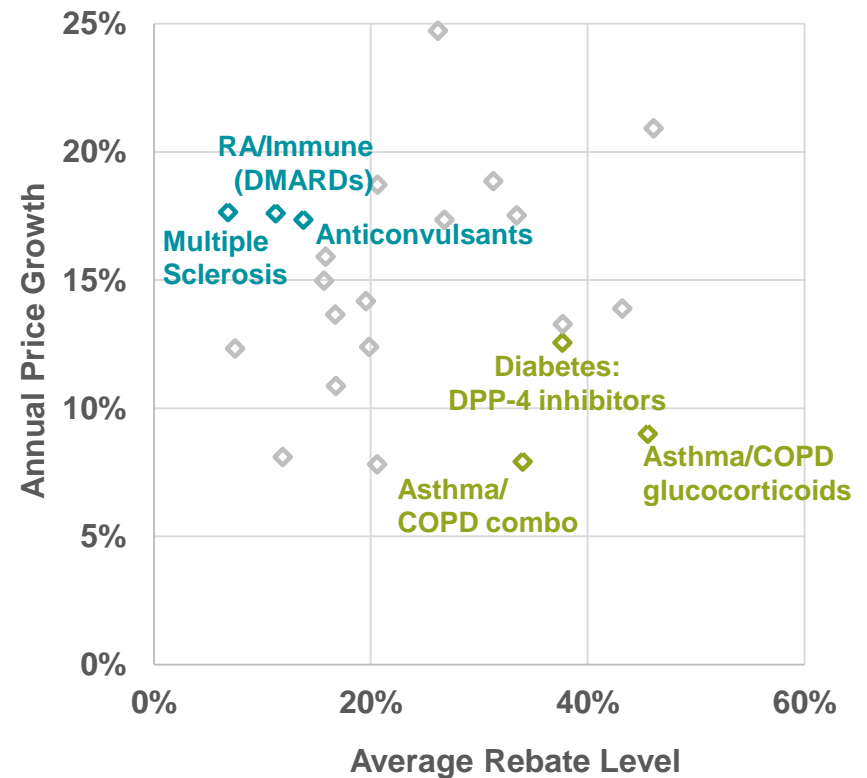


# No Correlation Between Brand Drug Rebates and Price Growth In Major Drug Categories

- Trends in major drug categories during the 2011-2016 time period show rebates are not correlated with price increases.
- Figures 3 and 4 show higher-than-average price growth in several major drug categories with relatively low rebates, including rheumatoid arthritis, multiple sclerosis, and anticonvulsants.
- Likewise, one observes lower-than-average price growth in several categories with relatively high rebates, including diabetes and asthma medications.

Figure 3:

Higher Price Increases with Low Rebates;  
Lower Price Increases with High Rebates



Source: Visante estimates and analysis of SSR Health data, 2017.

## No Correlation Between Brand Drug Rebates and Price Growth In Major Drug Categories

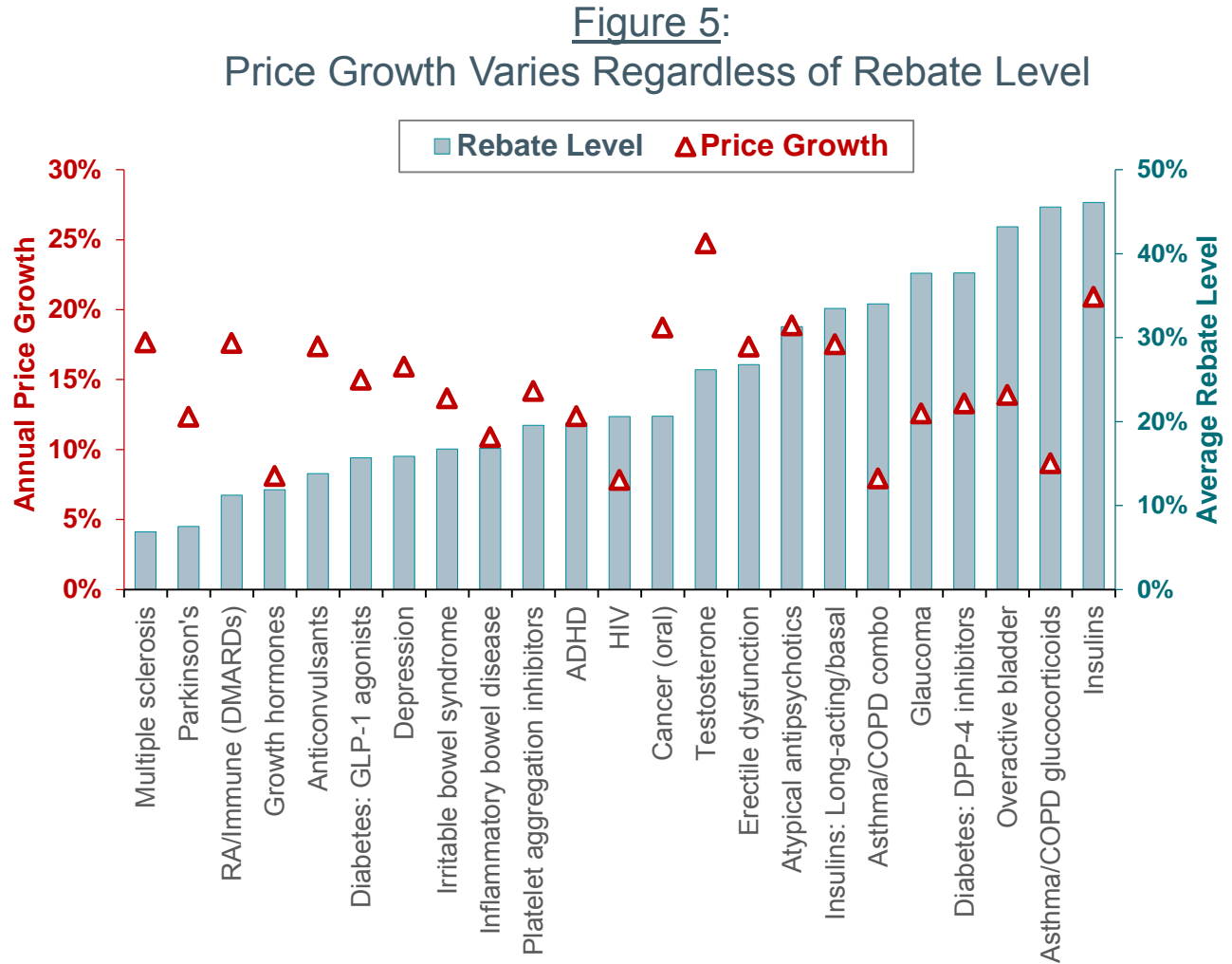
Figure 4: Categories with Lower Rebates and Higher Price Increases & Higher Rebates and Lower Price Increases

Trend	Drug Category	Average Rebate % (2011 to 2016)	List Price Increase (2011 to 2016)
Lower Rebates & Higher Price Increases	Multiple Sclerosis: Disease Modifying	7%	125%
	Rheumatoid Arthritis: DMARD	11%	125%
	Seizure Disorders: Anticonvulsants	14%	123%
Higher Rebates & Lower Price Increases	Diabetes: DPP- 4 Inhibitors	38%	87%
	Overactive Bladder	43%	92%
	Asthma/COPD: Steroid inhalers	46%	54%

Source: Visante estimates and analysis of SSR Health data, 2017.

# Drug Price Growth Varies Widely Across Drug Categories Regardless of Rebate Levels

- Price growth varies independently from rebate levels across drug categories.
- Figure 5 displays drug categories along the x axis sorted by average rebate level during the 2011-2016 time period.
- Average annual price growth during the same time period (plotted in red) shows wide variance by category.



Source: Visante estimates and analysis of SSR Health data, 2017.

# Methodology

---

- Visante examined commercially available data from SSR Health on list price (as measured by the widely-used Wholesale Acquisition Cost (WAC) price benchmark) and gross sales, as well as net prices and net sales (net of estimated rebates) for the 2007-2016 time period for the top 200 self-administered, patent-protected, brand-name drugs by 2016 gross sales. For methodological use, SSR Health also provided summary statistics for gross and net sales for all 1000+ brand-name drugs in their database.
- Visante excluded intravenous drugs and other products administered in hospitals, clinics, or physician offices, because these products are often reimbursed outside the pharmacy benefit administered by PBMs, and often have different types of discounts from manufacturers.
- Within the sample of the top 200 self-administered, patent protected, brand-name drugs, 24 drugs were excluded because of incomplete data for the study time period, leaving a remaining sample of 176 drugs for analysis.
- The sample of 176 drugs was divided into two subsets: one subset of 118 drugs launched before 2012, and another subset of 58 drugs introduced after 2011. We focused our analysis on the former, so we had complete data for the entire study period of 2011-2016. However, we found similar results (i.e., no correlation between price increases and rebates or rebate increases) in the latter subset.
- SSR Health estimates “total discounts” for each drug by estimating total gross expenditures from a commercial proprietary database, and total net sales based on figures reported by manufacturers in 10-Q reports and other public data.
- SSR Health provided quarterly estimates for each drug on total sales and price-per-unit for gross expenditures and net sales (net of discounts) for Medicaid and non-Medicaid markets.
- Visante used non-Medicaid markets as a proxy for commercial and Medicare Part D, where PBMs predominate. Visante estimates that commercial and Medicare Part D make up more than 90% of the drug spend in non-Medicaid markets.
- Average rebate levels (percentages) for each year were calculated by comparing total WAC sales vs. total net sales (i.e., sales net of rebates, using adjusted discounts reflecting estimated rebates, excluding other discounts).
- Estimated rebates for each drug reflect an average across the entire U.S. for non-Medicaid markets. In other words, some PBMs or plan sponsors may have higher rebates and some may have lower rebates.
- Since the timing of manufacturer net sales to wholesalers does not always match up with the dispensing of prescriptions to pharmacies, we used a three-quarter moving average.



# Methodology

---

- In order to estimate rebates in the commercial and Medicare Part D markets, Visante made adjustments to the “total discounts” by excluding:
  - Medicaid rebates estimated by SSR Health for each individual drug based on statutory required rebates plus CPI-penalties for historical price increases greater than the CPI.
  - Prompt pay discounts and other discounts to wholesalers and distributors estimated at 4.75% based on Pembroke estimates.<sup>1</sup>
  - Copay and patient assistance programs were estimated at 2% of gross brand expenditures in non-Medicaid markets based on a recent report.<sup>2</sup>
  - Part D coverage gap discounts were estimated at 2% of total gross expenditures in non-Medicaid markets based on a recent report.<sup>3</sup>
- Drugs were placed in categories determined by therapeutic classes or FDA-approved indications. Categories with two or more drugs were included in the “category analyses.”
- Based on published data, an average of 90% of rebates are passed through to plan sponsors.<sup>4,5</sup>

<sup>1</sup> The 2017 Economic Report On US Pharmacies and Pharmacy Benefit Managers, Drug Channels Institute, February 2017.

<sup>2</sup> The Pharmaceutical Supply Chain: Gross Drug Expenditures Realized By Stakeholders, The Berkeley Research Group, January 2017.

<sup>3</sup> Ibid.

<sup>4</sup> “Solving the Mystery of Employer-PBM Rebate Pass-Through,” Drug Channels, January, 2016.

<sup>5</sup> “Primer: Deconstructing the PBM Business Model in Today’s Marketplace,” Bank of America Merrill Lynch, March, 2017.