Assessing the Impact of Payer Coverage Decisions:

The Power of Integrating Patient Utilization and Market Access Data

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Introduction and Objectives

Drug coverage data combined with claims data can be a powerful tool for understanding the impact of payer coverage decisions on brand performance. However, the current industry standard approach to linking these two datasets is often time-intensive, inaccurate, and static. The objective of this analysis was to quantify the impact of payer coverage on drug market share across a broad spectrum of therapy areas and payers, to identify trends in payer influence, and to investigate variance between individual payers and market segments.

Data Sources

Komodo's Healthcare Map™ is well-suited for this methodology since it combines patient-level utilization and market access data on the same payer spine. Komodo tracks the patient journeys of more than 330 million unique individuals across HCPs, HCOs, payers, and care settings and captures formulary and policy criteria data updated daily and weekly, respectively.

Methods

We constructed an integrated dataset capturing 3.15 billion new patient starts across 3,525 drugs in 491 classes between June 2017 and December 2023. The dataset included 404 payers representing materially all Commercial, Medicare, and Medicaid insurers and PBMs. Each new patient start was linked to a payer, plan, and coverage status, including formulary tier position and any utilization management restrictions. Each drug's coverage was compared to coverage of competitors on the same plan and characterized as one of exclusive, advantaged, parity, disadvantaged, or excluded. These discrete coverage values were converted to scores and aggregated at the payer and line of business level. Overall, our aggregated dataset contains 36.5M observations of drug coverage and market share for a given month, payer, segment, and therapeutic class.

We expected to find positive relationships between coverage and market share, both due to exogenous common causes (e.g., efficacy) and in-model payer influence. We sought to quantify that relationship and to validate that observed variation in influence across payers and therapeutic areas was not spurious.

Limitations

Komodo's Healthcare Map incorporates multiple underlying source types with varying degrees of completeness. Claims from payer-complete sources are reasonably expected to include most, if not all, of a patient's interactions with the healthcare system. Claims from open sources that process claims on behalf of healthcare providers or payers may not capture all of a patient's healthcare interactions. For those patients observed solely from these open sources, it is possible that their therapy initiation date is not correctly captured.

Results

The Importance of Payer Coverage Decisions Varies Across Drug Classes

Payers are more influential in some classes than others. Share is more influenced by coverage in classes with multiple brands with similar efficacy. The classes where access was most predictive of share were Asthma/COPD, Cardiovascular ARB/CCB, Opioid Antagonist, and NMDA Receptor Antagonists.
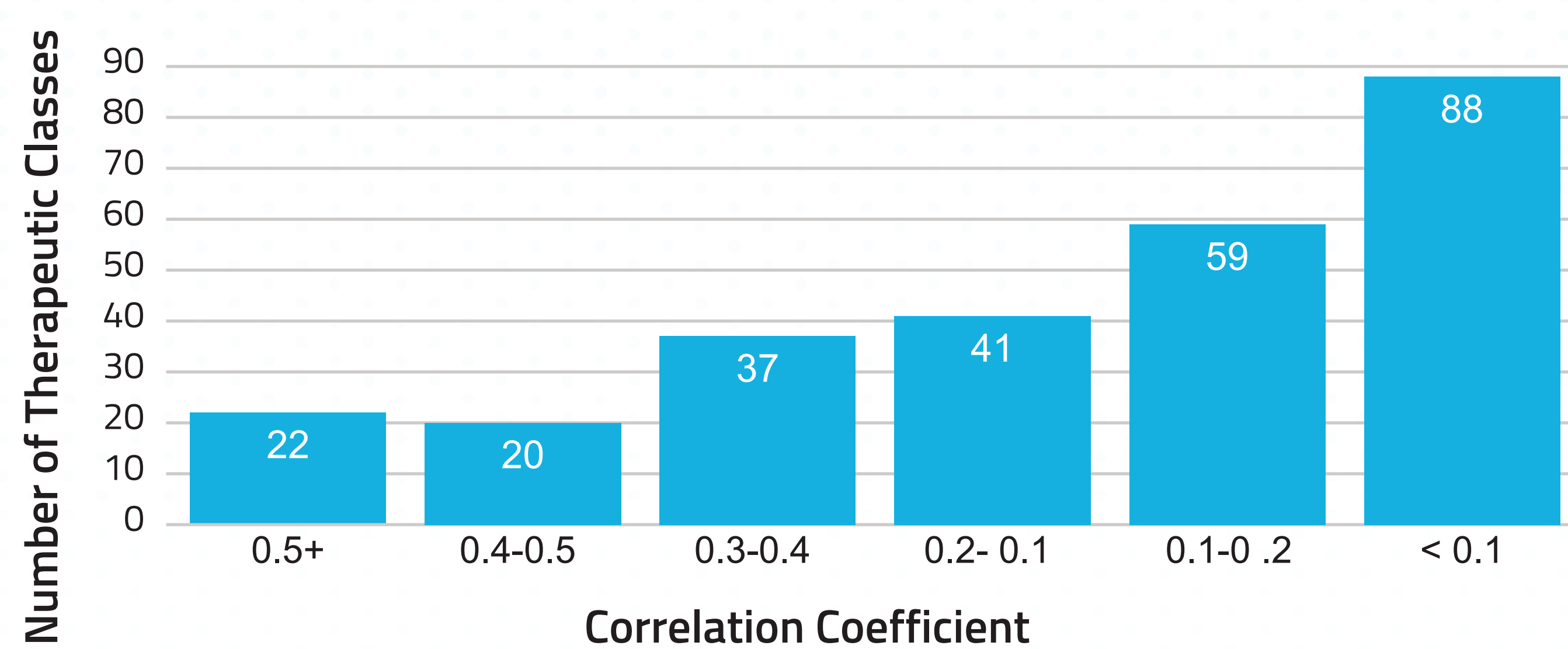

Figure 1. Correlation of Access to New Patient Start Share

To validate these findings we created two datasets, one consisting of new starts in odd numbered months, the other of new starts in even numbered months. In each dataset, we calculated the correlation between coverage and market share for each drug group and ranked drug groups from most- to least-correlated. Finally, we examined the relationship between a drug group's ranking in the odd-month dataset vs. the even-month dataset, and found a correlation of 0.991. In other words, a drug group exhibiting a close relationship between coverage and share in a pseudo-randomly selected half of the dataset was extremely likely to exhibit a materially identical relationship in an independent, nonoverlapping dataset.

Out of 226 classes with at least 3 actively markets brands, we identified 71 with consistent and pronounced payer influence (correlation > 0.3, R^2 > 0.1) across the entire dataset and both validation subsets.

Coverage Is More Predictive of Share for Medicare Patients, Less Predictive in Medicaid
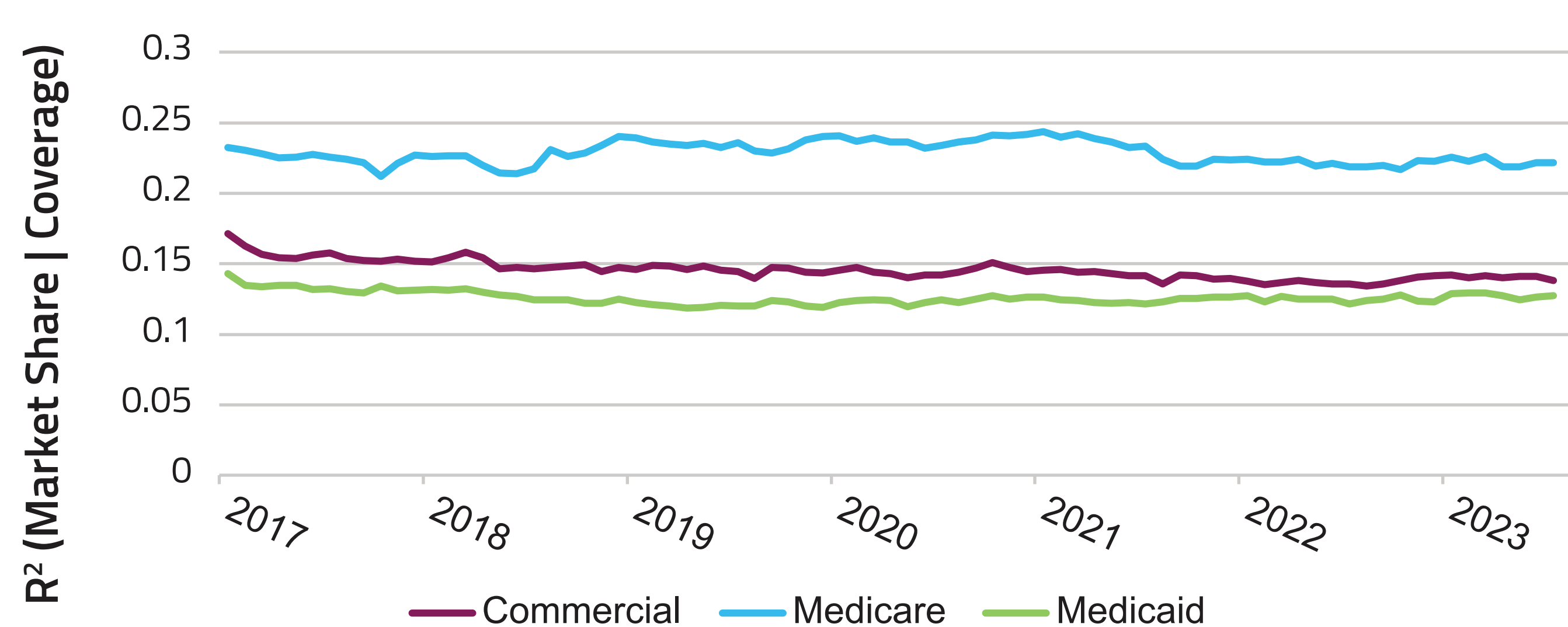

Figure 2. Monthly R^2 by Insurance Segment

Segmenting our dataset by month, we calculated the coefficient of determination (R^2) between coverage (independent variable) and market share (dependent variable) across all observations within each month.

We found that approximately one-fifth of market share variation between payers can be predicted by coverage, with coverage differentials for Medicare patients being more predictive of share than coverage differentials for Commercial or Medicaid patients.

Segment	R^2
Commercial	0.15
Medicare	0.23
Medicaid	0.13

Figure 3. Average R^2 by Segment (2017-2023)

We Observe Substantial Differences in Influence Between Payers

We validated payer R^2 rankings using the same approach described for therapeutic class differences, and observed a correlation of 0.982 between our two nonoverlapping validation data subsets.
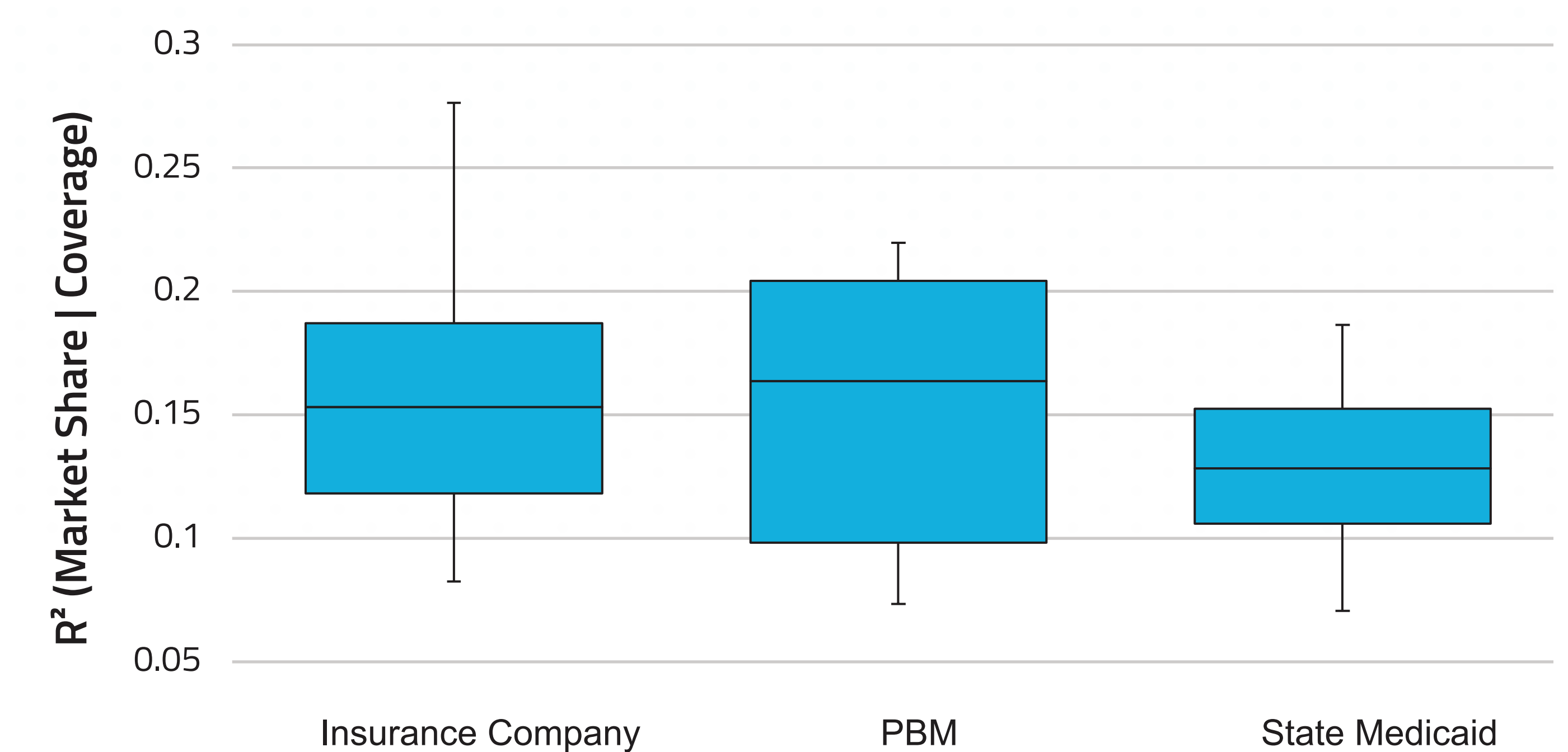

Figure 4. R^2 of Market Share to Coverage for Individual Payers by Type (2017-2023)

The large payers consistently exhibiting the tightest relationship between coverage and market share over the study period are:

- Blue Medicare Rx
- Cigna Healthspring
- Silverscript
- Wellcare
- UHC Community Plan
- United Healthcare

Conclusion and Further Investigation

In this analysis, we estimate that approximately 20% of market share differences for competing drugs can be accounted for based on payer coverage. We were able to validate that some therapy areas and payers consistently exhibit a stronger positive relationship between coverage and share than others.

Follow-up analyses may examine the degree to which payers are causing market share differentials by implementing UM restrictions and blocks (rather than implementing them in response to underlying factors driving share differentials), perhaps with an analysis of coverage changes.