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Before the
House Judiciary Committee
Subcommittee on Regulatory Reform, Commercial and Antitrust Law

On

"Competition in the Pharmaceutical Supply Chain:
The Proposed Merger of CVS Health and Aetna"

February 27, 2018

SUMMARY OF STATEMENT

- I am here today to discuss the potential economic implications and rationales for the proposed merger of CVS Health and Aetna. This merger will combine the assets of a pharmacy benefit manager, health insurer, chain of retail pharmacies, chain of minute clinics, and a variety of other assets into a single firm.
- CVS-Aetna is a vertical merger. i.e. firms at the same stage of the value chain that are proposing to combine into a single entity. Unlike horizontal mergers (i.e. firms at the same stage of the value chain merging such as the recently opposed Anthem-Cigna and Aetna-Humana merger) the theory and the empirical evidence regarding the impacts of vertical mergers on social welfare is relatively ambiguous.
- Vertically integrating firms choose to avoid the market in favor using an internal supplier (this is often referred to colloquially as a "make or buy" decision for the firm). This decision is often met with skepticism by economists and strategy professionals. This skepticism arises from the fact that a well-functioning economic market is efficient in that it provides the appropriate incentives for a good or service of a particularly quality to be produced by the lowest cost firm at the lowest possible price.
- However, we also know that firms often do not face the well-functioning and efficient markets that inhabit economic textbooks. Facing these imperfect markets, we may find that strategic vertical integration decisions by firms actually increase welfare compared to a counterfactual of the firm using an imperfect market to source a supplier.
- There are three potential existing market inefficiencies that could lead to vertical integration between CVS Health and Aetna creating value. These include: (1) a better coordination of the medical and pharmacy insurance benefits; (2) overcoming potential inefficiencies in the highly concentrated pharmacy benefit manager market; and (3) better utilization of provider resources to decrease medical spending. These rationales address the problems of meaningful uncertainty, misaligned incentives, asymmetric information, and an already highly concentrated PBM market.
- Overall, a merged CVS Health-Aetna could align many incentives in the health care market for the merged entity to offer a set of benefits including a decrease in: pharmaceutical list prices, consumer out of pocket payments, and overall health spending.
- The degree to which these savings will emerge is also a function of the degree of competition in resulting health insurance market. Absent meaningful competition for health insurance, even a value creating merger of this nature will result in an increase in firm profits rather than consumer welfare. Therefore, even after a merger continued vigilance on monitoring competition in health insurance markets is essential.
- It is also possible that that proposed set of activities may be too cumbersome for a single firm to manage and/or the proposed value creating rationales will not bear fruit for the newly merged firm. However, it is not the job of policymakers to stop firms from making potentially misguided decisions that harm shareholders, it is their job to protect consumers from market imperfections.

STATEMENT

Chairman Goodlatte, Subcomittee Chairman Marino, Ranking Member Nadler, Subcommittee Ranking Member Cicilline, and Members of the Subcommittee, thank you for holding a hearing examining the merger between CVS Health and Aetna and their potential economic implications of vertical mergers of this nature.

I. Introduction

My name is Craig Garthwaite and I am the Herman R. Smith Research Professor in Hospital and Health Services Management at the Kellogg School of Management at Northwestern University. I am also the Director of Kellogg's Health Enterprise Management Program (HEMA). In that role, I teach courses in the economics of strategy and health care strategy and organize Kellogg's healthcare business curriculum. In addition, my research focuses on a variety of issues pertinent to today's discussion including pharmaceutical pricing and the potential impacts of the changing health market and policy on the operations of private health firms such as hospital and insurers.

I am here today to discuss the potential economic implications and rationales for the proposed merger of CVS Health and Aetna. Before I continue, I believe it is important to clarify for the committee that I have not been in contact with representatives from either of the merging entities nor do I have access to any proprietary documents relevant to the merger or to the individual operations of the firms. For example, I do not have insight into the terms of the current contractual arrangement government the PBM relationship between CVS Caremark and Aetna. Therefore, my testimony should not be construed as evidence for or against the specifics of this merger or any judgment of the exact antitrust implications of combining these particular firms. Rather, my testimony is intended to highlight the broad economic incentives involved with a vertical merger that combines assets together in this manner and how such a merger could affect social welfare and health care spending. As such, it is also generally relevant to similar combinations of assets that exist in the market such as those owned by United Health Group in the form of United Healthcare and Optum.

II. Firms Involved in the Proposed Merger

While many Americans likely think of CVS as simply a chain of retail pharmacies, CVS Health the corporation has grown and now has business interests in a wide ranging number of segments in the health sector. Given the complexity of these organization it is important to understand the range of businesses involved in this proposed merger.

A. CVS Health

CVS Health engages in two primary business segments: pharmacy benefit management (PBM) and retail/long-term care (LTC) pharmacies. Their PBM business consists of pharmacy plan and formulary design for employers, insurance companies, employee groups, and health plans, including Medicare Part D Plans, Managed Medicaid plans, and plans offered on the public and private exchanges.[i] The PBM segment also includes specialty services such as retail pharmacy network and prescription management services for other retail pharmacies, as well as Medicare Part D Prescription Drug Plans (PDP) offered through its subsidiary, SilverScript Insurance Company. CVS Health accounted for 21% of PDP enrollment and 12.9% of total Part D enrollment in 2016.[ii] CVS Health's more familiar retail segment includes over 9,000 retail stores operating in 49 states and the District of Columbia selling prescription drugs and general merchandise, with the majority of revenues coming from prescriptions drugs. The retail segment also includes over 1,100 retail health care clinics (often named "MinuteClinics") located in their retail pharmacy locations and long-term care pharmacy services through its Omnicare subsidiary.[iii] In 2016, PBM and other pharmacy services contributed $119.96 billion in revenue and $4.67 billion in operating profit while retail/LTC pharmacies contributed $81.1 billion in revenue and $7.28 billion in operating profit.

B. Aetna

Aetna is a large health insurer operating nationally. In 2016, Aetna had revenues of $63.2 billion, with over 95% coming through their health care business segment.[iv] Aetna's health care segment consists of medical, pharmacy, dental, and other health insurance plans, primarily offered through employers or government programs. As of the end of 2017, Aetna estimated they served 22.2 million medical members, 13.4 million dental members, and 13.8 million pharmacy members.[v] Figure 1 shows the market shares of the largest insurers. In 2016, Aetna represented 11 percent of the market, an increase from its share of 8 percent in 2006.[vi] Approximately 60 percent of Aetna's medical membership are individuals for whom Aetna is a third party administrator (TPA) for an

employer.[iv] As a TPA, Aetna bear's no medical risk but instead organize and manage the health insurance benefits for employers. Throughout my testimony I will refer to this business activity as "insurance" and at times Aetna an "insurer" even though they bear no risk for health spending. Where the distinction is important I will refer to a "payor," which is the entity that is ultimately responsible for spending, i.e. a self-funded employer or a risk bearing insurance company.

Since 2011, CVS Health (then CVS Caremark) has served as the PBM for Aetna's pharmacy members.[vii] In 2016, 48.5% of Aetna's $54 billion in premiums collected were from Medicare and Medicaid products. With 1.92 million PDP enrollees and 1.23 million Medicare Advantage enrollees in 2016, Aetna accounted for 7.0% of both Medicare Part D enrollment and combined health and prescription drug Medicare Advantage enrollment.[ii] [viii] This makes Aetna the fourth-largest national insurer for Medicare Part D and the fifth-largest national insurer for Medicare Advantage. In the Medicaid MCO market, Aetna offered plans in 12 states during 2017, the fourth-most of all insurers, but was only the ninth-largest national insurer by enrollment among states that reported enrollment statistics, with less than 2% market share.[ix] Aetna nearly doubled its Medicaid enrollment after their 2013 acquisition of Coventry Health Care.[x]

C. Proposed Merger

CVS Health and Aetna announced their merger agreement on December 3, 2017. Under the plan CVS would acquire Aetna for approximately $69 billion.[xi] Under the merger agreement, Aetna would operate as a stand-alone business unit within CVS Health. In a press release accompanying the merger agreement, the companies claimed consumers would benefit from the acquisition because the combined company could provide integrated community-based health care that would improve patient health outcomes, increased integration of data and analytics that would lower costs, and improved coordination to treat chronic disease.[xi]

II. Vertical Integration in Health Care Markets

Given the current levels of market concentration in health care and the recent spate of merger activity (and subsequent challenges by anti-trust authorities), there are a variety of reasons one may question the strategic rationales and potential outcomes of proposed mergers in this area. It is the purview of policymakers overall and this committee in particular to consider these broader questions of the impact of consumers and the market.

The proposed CVS-Aetna merger differs from most of the recently challenged mergers. These other mergers have been primarily horizontal, i.e. firms at the same stage of the value chain that are proposing to combine into a single entity. While they vary by case, horizontal mergers can have relatively clear empirical and theoretical implications on prices and welfare. In contrast, as can be seen from the description of the assets of each firm above, the proposed CVS-Aetna merger is primarily vertical, i.e. a combination of assets in different stages of the value chain.[xii] Both the theory and the empirical evidence regarding the positive or negative effects of such mergers on social welfare is ambiguous.

Vertical integration involves a decision by firms to undertake an activity internally rather than take advantage of the external market. For example, after the merger Aetna will have its PBM services performed by a division of the combined firm (i.e. Caremark) rather than using an external supplier such as Express Scripts or Optum. In making this choice to vertically integrate, a firm is choosing to avoid the market in favor using its own internal supplier (this is often referred to colloquially as a "make or buy" decision for a firm). This decision is often met with skepticism by economists and strategy professionals because *well-functioning economic markets* are efficient in that they provide the appropriate incentives for a good or service of a particularly quality level to be produced by the lowest cost firm at the lowest possible price. In other words, under ideal market conditions firms (such as Aetna and CVS) should get the best price for services by using the open market.

For this reason, I (and many other economists) am broadly skeptical of the ability of many vertical integration efforts increase efficiency. This skepticism is not health care specific. For example, Delta Airlines recently bought an oil refinery in an attempt to decrease their jet fuel costs – a move that has both increased the complexity of their operations and done little to truly increase their economic prospects.[xiii] Similarly, I would strongly question a hospital that proposed integrating into the manufacturing of commodities such as bandages, sutures, and other widely used products.

In this way, firms using well-functioning markets create the greatest amount of social welfare and their choice to vertically integrate gives up these efficiency benefits. That said, we also know that firms often do not face the well-functioning and efficient markets that inhabit economic textbooks. For example, the presence of incomplete information, uncertainty, and meaningful transaction costs can decrease the efficiency of markets. Facing these imperfect markets, strategic vertical integration decisions by firms can increase welfare compared to a counterfactual of using the imperfect market to source a supplier. For example, a group of hospitals have recently proposed creating a firm that manufacturers generic prescription medications that they purchase from markets that are either

consistently in shortage and/or supplied by a monopoly manufacturer charging an exceptionally high price-cost margin. In this setting, hospitals are proposing integration to solve the market inefficiency in their supplier market.[xiv]

Today I will discuss three potential existing market inefficiencies which support the conclusion that a CVS-Aetna merger could create social value. It is important to understand the potential for value creation because some mergers (both horizontal and vertical) are driven by a firm's desire to capture value rather than increase social welfare. For example of consider the recently successfully blocked horizontal merger of Advocate and Northshore health systems in Chicago, Illinois and the also blocked vertical merger of St. Luke's Health System and Saltzer Medical Group in Boise, Idaho.[xv] Given this potential exists, it is important to understand the potential efficiency-creating rationales for how the proposed merger could increase welfare.

In considering the merger of CVS-Health and Aetna there are at least three primary rationales for how such a combination of assets into a single firm could create more value than the sum of these activities being carried out by separate firms: (1) better coordination of the medical and pharmacy insurance benefits; (2) overcoming potential inefficiencies in the highly concentrated PBM market; and (3) better utilization of provider resources to decrease medical spending.

III. Better Coordination of Medical and Pharmacy Benefits

Health insurance plans generally consist of a "medical benefit" and a "pharmacy benefit." The medical benefit covers spending on physician services, hospitals, home health, and other medical services. Crucially, it excludes prescription drug coverage, which is separately provided under a pharmacy benefit. Sometimes, the medical benefit and pharmacy benefit are provided by the same insurer while for other consumers health insurer provides both benefits. Increasingly, the literature demonstrates that insurers offering a coordinated pharmacy and medical benefit make different decisions regarding the design of the insurance contract than those that are responsible for only the pharmacy spending. These differences broadly reflect an incentive by a coordinated firm to consider total health spending rather than simply spending on either medical of pharmacy benefits. As an example, consider a drug that costs $1,000 but on average saves the medical insurer $10,000 in future hospital costs. For a standalone PBM managing only the pharmaceutical benefits, this drug represents a $1,000 cost. However, a combined insurer managing total health spending views this drug as a $9,000 savings – and therefore has strong incentives to design contracts and systems that

encourage the patient to take that drug. Importantly, these coordinated activities are good for consumers because they both improve health and lower healthcare spending.

A. Existing Relationships Between Medical and Pharmacy Benefit Managers

While coordination can lead to greater benefits, writing a contract to manage such efforts across firms is both difficult and costly. To understand this point, it is important to understand the variety of market players and their interactions. PBMs design formularies, run utilization management programs, establish networks of retail pharmacies, and negotiate rebates from the list prices for pharmaceuticals. PBMs earn revenue through several channels, but the most important for understanding the potential benefits of vertical integration are the per member per month (PMPM) premium and a contracted portion of the rebate or discount negotiated from the pharmaceutical firm. Importantly, in most contracts the PBM does not bear risk for changes in the medical spending of beneficiaries (in fact in many contracts that bear little risk for changes in pharmaceutical spending).

Payors face decisions when deciding whether to have the medical benefit provider also administer the pharmacy benefit. One option is to carve out the pharmacy benefit to a PBM that is separate from the firm administering their pharmacy benefit. The Pharmacy Benefit Manager Institute (PBMI) estimates that, in 2017, 46 percent of employers carve out the pharmacy benefit, as seen in Figure 2. Firms may select this option in order to allow for greater flexibility of the design of the pharmacy benefit as well as more freedom for negotiation and potentially lower prices for these services.[xvi] The remaining 54 percent of firms carve-in the pharmacy benefit which involves signing a contract with single firm to manage both the pharmacy and the medical benefit. Among other factors, this creates the potential for greater coordination between the pharmacy and the medical benefit.[xvi] Under a carved-in contract the insurance company has the option to either manage the pharmacy benefit in-house or establish a separate contractual relationship with an external PBM. Managing the benefit in-house requires having the necessary assets and activities to operate a PBM. As of the announced merger between CVS and Aetna, United Health Group, and Humana were the only major insurers that solely owned their own PBMs.[xvii]

B. Evidence of the Effects of Coordinated Benefits

The most compelling research about the nature and importance of coordination in this area comes from the Medicare program where private firms offer a stand-alone Medicare Part D prescription

drug plan (PDP) and/or a Medicare Advantage plans (i.e. Medicare Part C) that covers both the medical and pharmacy spending of the beneficiary. Starc and Town (2015) find that enrollees in coordinated Medicare Advantage plans spend more on pharmaceuticals than similar enrollees covered with a stand-alone PDP.[xviii]

These differences in spending appear to represent a purposeful (i.e. strategic) effort by PDPs to control their *own* spending, rather than the overall health spending of enrollees. Certain types of pharmaceuticals have a greater ability to influence the medical spending of enrollees. Therefore, a coordinated firm that is attempting to minimize total health spending would likely focus on providing more access to drugs that have a greater ability to offset future medical spending. Figure 3 from Starc and Town (2015) depicts the estimated differences in spending for MA plans vs. PDP plans based on whether the pharmaceutical is identified to have a large or a small effect on medical spending. As evidence of the higher spending being a strategic decision of a coordinated firm, the higher pharmaceutical spending for the combined MA plans are concentrated in the pharmaceuticals that are known to have a larger effect on medical spending, i.e. the "high offset" category. In considering the mechanism underlying this result, the authors also estimate systematically lower out-of-pocket payments for consumers for drugs in categories that are normally believed to have a high pharmaceutical offset (these estimates are depicted in Figure 4). Lavetti and Simon (2016) examined the same question and found consistent results that supported a strategic difference for firms offering a coordinated vs. an uncoordinated benefit product.[xix]

C. The Potential Coordination Benefits from Vertical Integration

An insurer administering a health plan with a carved-in pharmacy benefit could write a contract with an external PBM that attempts to create the appropriate incentives for considering the interaction between these two types of health spending. Similarly, a payor could choose to only outsource a portion of the activities normally done by a PBM, i.e. the payor (or the firm administering the medical benefit) could internally design the formulary but outsource the negotiation with pharmaceutical firms, pharmacy network design, and/or processing of claims to a PBM. Regardless of the degree of outsourcing and attempts at contract design, it would be quite difficult to draft a complete contract in this setting, i.e. a contract that accounts for the variety of ways in which each party might try and capture value from investments made by the other.

As an example of the difficulty of crafting a complete contract, consider that even though it is known that decisions made by the PBM can affect medical spending, the exact magnitude of this

relationship across products is uncertain. One solution may be to align incentives by forcing the PBM to bear all (or even a large portion) of the medical risk. However, a contract where the PBM bears medical risk creates a separate moral hazard problem where the firm managing the medical benefit now has reduced incentives to manage that medical spending.

Determining the correct mix of risk bearing incentives is difficult but without such a complete contract (i.e. one where each party receives the correct incentives to provide the optimal level of effort), each party may make decisions that focus more on value capture than value creation. In addition, expending resources to develop the knowledge and expertise necessary to craft and manage these contracts is costly and decreases the efficiency benefits of outsourcing this activity in the first place. However, if the PBM and the insurer are owned by one firm, all parties are inherently motivated by the same profit function and therefore, in a well-run firm of this configuration, the incentives for constructing the most efficient insurance benefit are aligned. This is one source of value creation that emerges from the combination of CVS Health (and particularly its PBM division Caremark) and Aetna into a single firm.

IV. Overcoming Potential Inefficiencies in the Highly Concentrated Pharmacy Benefit Manager Market

In the United States there are many prices associated with pharmaceutical products. Broadly speaking, these drugs have a publicly available list price set by the manufacturer. Payors employ PBMs to, among other things, negotiate rebates (i.e. discounts) on the pharmaceuticals purchased by their enrollees. This is true whether the pharmacy benefit is carved into the medical benefit or carved out into a separate plan.

Over time, pharmaceutical rebates have become a large and important part of this market. Figure 5 shows that in 2016 pharmaceutical manufacturers paid rebates of approximately $127 billion – an increase of 108 percent ($66 billion) since 2011. The recent rise is larger in both absolute and relative terms than the history of this market. From 2007 to 2011, the total magnitude of these rebates increased only 42 percent, for a total increase of $18 billion. While payors broadly care about the post-rebate (i.e. net) price, and PBMs often point to these increasing rebates as evidence of their effectiveness, higher list prices can have more direct impacts on consumer out of pocket payments. Consumer cost sharing (either spending on pharmaceutical products within the deductible portion of the insurance contract or a percentage coinsurance rate) is primarily based on the list rather than the net price. Thus, any inefficiencies that create incentives for high list prices (even if those list

price increases are primarily offset by rebates) have clear impacts on consumer spending under most existing contracts.

PBMs are able to secure discounts based on their ability to shift customers across competing therapeutic substitutes. For example, if there are two brand name statin medications that treat high cholesterol, the PBM can place the product providing offering a lower net price on a more preferential tier of its formulary thus lowering the out of pocket payments from an individual enrollee. In extreme cases, a PBM could entirely exclude a product from its formulary if the firm is unwilling to provide a sufficiently low net price (i.e. pay the PBM a large rebate). The use of exclusion lists has grown in recent years. Figure 6 shows the number of products on the number of products that are excluded by the two largest PBMs, CVS Health and Express Scripts.

A. Potential Inefficiencies in the Existing PBM Market

To understand potential inefficiencies in this pricing system, it is important to know how the net price of a pharmaceutical product is determined. Payors (i.e. self-funded employers or insurance firms bearing risk) first pay the publicly known list price to the pharmaceutical firm. PBMs then negotiate a discount (or rebate) from this list price. PBMs transfer a portion of that rebate to the payor as dictated by a contract between those parties. Figure 7 provides a broad overview of the transfer of funds across parties in the pharmaceutical supply chain. The share of the rebate transferred to the payer is dictated by a contract that is the result of a bilateral negotiation between the PBM and the payor and therefore depends on the relative bargaining power of the two parties. Figure 8 shows that variety of ways in which payors receive their share of the rebates ranging from receiving all of the rebate, a fixed percentage, and a flat fee. The majority of payors do not currently receive 100 percent of the negotiated rebate – and many simply receive a guaranteed flat amount regardless of the size of the rebate. The size of rebates paid to each PBM is kept strictly confidential – up to and including onerous audit restrictions in the contracts that limit the ability of the payor to monitor the financial activities of the PBM.[xx] As a result, payors often lack full insight into the magnitude of the rebates generated by their pharmaceutical spending – a lack of information that makes it difficult for them to understand the full stakes over the negotiation.

If the PBM market were well-functioning, the structure of the contract and the confidential nature of the rebates should have no effect on the final net price for the pharmaceutical. In fact, confidential rebates in a well-functioning market could be useful because they facilitate increased price discrimination and increase total output sold. In contrast, publicly transparent rebates mean

that pharmaceutical firms know any discount to a particular PBM would be known the market and therefore manufacturers would be less willing at the margin to give large discounts.

Importantly, in a competitive PBM market a payor would not actually need to know the full value of a specific rebate. Instead, each PBM would attempt to secure the payer's business by offering progressively larger amounts of the rebate to the payer (either directly or through a lower PMPM payment). The end result is that the total cost of the pharmacy benefit to the payor would be minimized and the PBM would no longer earn large economic profits. However, in a less competitive market, PBMs have weaker incentives to compete for a payor's business by lowering the total cost of the service. With a large number of firms in the market, each PBM understands that they all benefit by fully passing along the surplus to a payor in order to secure their business. In its current form, the PBM marketplace is dominated by a few small competitors. Figures 9 and 10 contain the market shares for PBMs in 2011 and 2015, respectively. As a result of a series of mergers, this market is highly concentrated with three firms controlling over 70 percent the market. The two most recent mergers were between Express Scripts and Medco in 2012 and OptumRx and Catamaran in 2015. The dissenting opinion to the Express Scripts-Medco merger foreshadowed potential negative effects of these types of mergers.[xxi]

High market concentration can be a cause for concern, but it is particularly worrisome in the PBM market because opaque pricing and the rebate structure provide both the pharmaceutical manufacturer and the PBM encourage higher list prices and higher rebates. This incentive can be explained using a simple numerical example. Consider a manufacturer that proposes raising its list price by $10 and offers the PBM a rebate of $9. The manufacturer would be happy with this arrangement because their net price has increase by $1. The question of whether the PBM accepts this price increase depends on how much of the rebate they must pass along to the payor. Without significant competition, the PBMs have less incentive to compete for the payor's business and thus can pass along only $8 of the rebate – causing the payor to spend $2 more than they otherwise would have because they lack the information to ask for the entirety of the rebate and/or list price increase. These incentives may be strongest in a contract structure where the PBMs only passes along a fixed amount per prescription regardless of the size of the rebate and the payor has no information about the size of the rebate. The result is that net prices rise to the benefit of the PBM and the manufacturer and to the detriment of the payor.

To examine the degree to which rebates actually create perverse incentives in the pharmaceutical market, my research in Garthwaite and Scott-Morton (2017) examined the stock

market performance of pharmaceutical firms and Express Scripts (the markets largest publicly traded "pure-play" PBM) after two exogenous shocks to expectations about future drug prices.[xxii] The first event was the surprising election of the Republican Candidate Donald Trump as President of the United States. Given the broadly unexpected nature of this event, it was an exogenous shock to the overall market's expectation of future drug prices. Figure 11 shows the abnormal change in stock prices (i.e. the results of an event-study analysis examining the change in specific stock prices relative to the overall stock performance on that day) in the days following this surprise event for a variety of health care stocks.[xxiii] Given the relative policy positions of the two candidates, investors likely interpreted the election as new and positive information about future drug prices and pharmaceutical firm profits. This can be seen by the large stock price increases for both traditional pharmaceutical and biotechnology firms. What is perhaps more surprising is the large increase in the stock price for Express Scripts – a middleman firm that should not directly benefit from a rise in drug prices.

We also examined stock market performance following President Trump's statements in *Time* magazine that "I'm going to bring down drug prices," and "I don't like what has happened with drug prices."[xxiv] After this statement the stocks of pharmaceutical firms, biotechnology companies, and Express Scripts all fall together, as shown in Figure 12. With well-functioning markets, Express Script's expected future profitability should not decrease because of expected lower drug prices.

B. How a CVS- Aetna Merger Could Address Existing Inefficiencies in the PBM Market

Our evidence suggests that the concentrated PBM market could be leading to inefficiencies. A question remains as to how this could be addressed by policymakers or regulators. One option that might be considered, but not one that I am proposing today, would be for some form of regulatory enforcement that increases the number of firms in the market by breaking the existing players into smaller firms. For a variety of reasons this is unlikely to occur and upon studying this issue further we may likely find that this type of intervention is actually far costlier than the benefits (a common concern when considering post-merger enforcement when the horse has already left the proverbial barn). Regulators could also look for ways to ease entry into this market. Specifically, policymakers could more carefully examine the existing contract structures to see the degree to which most favored nation clauses or delayed rebate payments may decrease the ability of a new entrant to emerge and challenge existing players. Absent any direct regulatory action, in Garthwaite and Scott-Morton (2017) we suggest possible regulations or legislation that mandate all financial

payments to PBMs are instead initially directed towards payors. Payors would then be free to contract with a PBM about an appropriate portion of the rebate to transfer between the parties. This would solve the existing information asymmetry about the size of the available rebates and allow payers to negotiate with the same set of information as their PBMs counterparties.

A merger of a PBM and a payor within the same firm would also would solve information asymmetries and align incentives. Such a merged firm no longer has strong incentives for their internal PBM to accept high list prices and high rebates. The current incentive misalignment and lack of transparency could be one reason why both United Health and Humana have chosen to operate their own PBMs and Anthem recently announced an attempt to end their contract with Express Scripts – the nation's largest PBM.[xxv] Similarly, a combined CVS-Aetna would have a decreased incentive to strategically manipulate rebates and list prices for their jointly covered customers. This should result in lower net prices and out of pocket payments for consumers.

Importantly, the potential net efficiency gains from a CVS-Aetna merger addressing existing inefficiencies in the PBM market are not certain and depend on two additional market features. First, it is quite possible that the combined firm would not be as cost-efficient as the use of an external supplier. Perhaps more concerning is the required role of competition in the health insurance market. The improved information environment without high list prices and rebates may allow CVS-Aetna to craft a more competitively priced insurance package for employers (either for contracts where they bear risk or those where they serve as a third party administrator). However, the incentive to craft such a competitive package depends on how hard the merged entity must compete for new customers. This is a function of the toughness of price competition in the health insurance market. Thus, even if vertical integration creates value through improved information and incentives around pharmaceutical rebates and price, they still require a competitive insurance market to reach a more efficient outcome (as opposed to simply transferring economic rents between firms).

V. Better Utilization of Provider Resources to Decrease Health Spending

A common criticism of the United States healthcare system is that its reliance on primarily a fee-for-service payment system (i.e. a system when providers are paid more based on service utilization rather than health or another outcome) leads to an inefficiently high level of spending. In recent years, there have been many attempts to move the system to one where providers are paid based on the value created by their services rather than simply the quantity of services they perform.

These plans take a variety of forms but the overall incentive effect is the same – they rely on firms earning more money if a patient has lower health care spending.

Perhaps the clearest example of such an integrated health plan is a fully integrated provider sponsored health plan such as Kaiser Permanente in California. In a provider sponsored health plan the insurer, the hospital, and the doctors are all owned by the same firm. Therefore, for a given premium the firm earns greater profits if patients use fewer medical services. Success over time for the health plan is based on being sufficiently attractive to patients at a given premium that they continue to serve those individuals – i.e. simply decreasing the amount of care available is unlikely to be a successful strategy. In addition, if the health plan expects to cover individuals for a long period of time to have greater incentives to invest in preventive health care since improved health could result in reduced medical expenditures in the future.

A. Retail Clinics as an Emerging Health Care Setting

One method of decreasing health spending is providing greater opportunities for individuals to receive care in a lower cost setting. Ideally these visits would either (a) displace care that would inappropriately provided in a higher cost setting; and/or (b) provide preventive care that improves health and avoids future hospitalizations or other high cost care. One potentially lower price site for care that has emerged in recent years are retail clinics. These facilities are generally staffed by mid-level providers such as nurse practitioners and offer treatment for acute but mild medical conditions such as ear infections, vaccinations, strep throat, etc.

A primary operator of retail health clinics is CVS which was expanded the offerings at their chain of retail pharmacies to include a series of "minute clinics." CVS described these clinics as being "staffed by nurse practitioners and physician assistants who utilize nationally established guidelines to diagnose and treat minor health conditions, perform health screenings, monitor chronic conditions, provide wellness services and deliver vaccinations."[xxvi] Currently over 10 percent of the firm's retail pharmacies contain a minute clinic. For purposes of comparison, in fiscal year 2016 the retail pharmacy chain Walgreens also operated retail clinics and approximately 5 percent of their retail locations had those clinics.[xxvii] A third retail pharmacy chain Rite-Aid offered clinics at 2.2 percent of their retail locations in fiscal year 2017.[xxviii]

While retail clinics have the potential to decrease medical spending by displacing visits that otherwise would have occurred in higher cost setting (or helping avoid a second more costly visit), it is also possible that the convenience of these clinics could actually *increase* spending by changing the

number of visits at the extensive margin. Specifically, as these convenient locations for care decrease the costs of getting to a visit, individuals that may not have seen a provider (and therefore incurred no cost) would now see a provider and have increased health spending. The existing evidence on the aggregate impacts of these clinics shows two salient facts: (a) visits at a retail clinic are less expensive than similar visits at another provider[xxix]; and (b) the aggregate impact of access to retail clinics is *increased* rather than decreased spending.[xxx] We have little understanding to date as to the welfare consequences of these changes in utilization and spending. It could be that the increase in spending is welfare increasing if it improves an individual's health and they value this improvement. However it could also be evidence of moral hazard where individuals are consuming health care at below its value because they do not bear the direct financial cost of the visit.

B. Potential for Cost Savings from Provider-Payer Coordination Under Proposed CVS-Aetna Merger

These existing studies provide evidence about the effects of retail clinics operated by firm's such as CVS and Walgreens whose *primary incentive is to maximize the revenue of the clinic* and the surrounding retail footprint. Firms operating clinics facing these incentives would select service offerings that translate into increased pharmacy spending and retail sales with little direct concern for the impact on aggregate health spending. Therefore, it is perhaps not surprising that such clinics would not results in lower overall spending.

However, a firm that is integrated beyond simply a retail footprint would make different economic decisions. For example, consider CVS Health which is currently a PBM integrated with a chain of retail clinics uses this combined set of assets to provide a more comprehensive pharmacy benefit – where some of the revenue benefits from the retail clinic activities flow to the PBM. In describing its minute clinic strategy, CVS notes that these facilities are "an important and differentiated part of the enterprise that offers certain capabilities to PBM clients and their members. For example, we offer plan-sponsored co-pay reductions to encourage use of MinuteClinic, thereby helping to reduce emergency room visits and to lower overall health care costs. We also partner with our health plan clients sponsoring patient-centered medical homes, biometric screenings for plan members, closing gaps in care, and onsite clinics at client corporate headquarters."[xxvi]

However, there are limits to the amount of coordination that can profitably occur with an integrated PBM and retail clinics – precisely because PBMs bear little of the risk for medical spending. As a result, the combined entity may not have the incentive to make the necessary investments to reduce future health expenditures. Such investments would require investments from

a variety of parties. For example, the clinics operated by an integrated firm could offer preventive care services that are primarily intended to reduce health expenditures rather than increased retail revenue. This involves the direct costs of providing these services and potentially an opportunity cost as these firms shift their attention away from activities that would generate more direct revenue.

To provide the right incentives for the highest value patients to visit these clinics, insurers must invest in analytics and benefit designs that identify, direct and encourage specific subsets of patients to utilize these new sites for care. The size, scope, and potential return of these investments is unclear. What is certain is that each firm would need to make fixed cost investments that would generate savings and those savings could initially accrue to another party in the value chain. It is also unlikely that the two parties could write a complete and satisfactory contract that would appropriately apportion the potential social value created by these activities to the firm whose investments were responsible. As a result, each set of firms would underinvest compared to the optimal amount out of concern that another party would capture the value creates by its investment. This underinvestment is an economic condition known as hold-up, i.e. a situation where a firm underinvests compared to the optimal amount due to a concern that another party will claim the value created by this investment.

One potential solution for hold-up is vertical integration between different parties in the value chain. For a vertically integrated firm, there is no hold-up concern. Consider the potential case of a merged CVS-Aetna. If this firm changed its retail clinic strategy and that resulted in lower future health expenditures, there is no uncertainty that the merged entity would capture that value created (i.e. the only uncertainty could be whether the gains from a successful venture would be attributed to a particular division). Given this certainty about the potential value capture, hold up is avoided and the firms has the appropriate incentives to make investments that maximize social value.

IV. Potential Concerns

My testimony so far has discussed how the potential CVS-Aetna merger could create value. However, it is still unclear whether the potential value created will be captured by the newly merged firms or transferred to consumers. Lawmakers should be legitimately concerned about both equity and efficiency and therefore must consider value capture in addition to value creation. At a minimum, the efficiency of this merger hinges on the degree of competition in the health insurer market. Without a competitive market for health insurance (either for third party administrator services or fully insured contracts) there will be no incentive for the newly merged firm to transfer

value to consumers in the form of lower prices. While recent successful efforts at regulatory enforcement by the Department of Justice have maintained competition in these markets, there is some dispute about whether the existing level of consolidation leads to truly competitive markets. [xxxi]

A. Increasing Barriers to Entry in the Health Insurance Industry

Even if health insurance markets are competitive today, there could be a concern that the proposed CVS-Aetna merger could change the nature of competition in the insurance market. Specifically, imagine that this venture is wildly successful and that the combined firm is therefore able to create insurance products for customers that are far more competitive than other more traditional insurers. If this strategy is successful, it could mean that future success in the health insurance industry would require firms to have the capabilities to be a payor, PBM, and provider. This is a complex set of tasks that may be difficult and especially costly for potential new entrants to replicate. This could be particularly concerning because recent evidence from the implementation of the Affordable Care Act insurance exchanges suggests that *de novo* entry into the insurance market is already quite difficult without any additional complications of these new asset and activities.[xxxii]

At the extreme, it could be that the fixed costs of operating such a venture in each market are so great that the required minimum efficient scale relative to the market size would serve as a barrier to entry for potential new firms. If this were the case, the market for this type of insurance product would be effectively limited to a small number of firms that faced relatively little threat from competition (i.e. imagine a world where only United Health Group and CVS Health-Aetna have the required assets to effectively compete in the insurance market). If this were to occur, vertical integration could lead to the maximum amount of social welfare but the benefit would be primarily enjoyed by firms rather than consumers.

B. Difficulty Regulating Profits of Integrated Insurance Market

Importantly, even if it were true that the scale and complexity of the merged assets served as a barrier to entry there are still regulatory policies that could be used to maximize social welfare. At a minimum, existing profit regulations exist in the form of the medical loss ratios (MLRs). These regulations require that insurers spend between 80 and 85 percent of their premium revenue on the medical services of enrollees.[xxxiii] If firms do not meet this level they must rebate the difference to their customers. These regulations are intended to effectively cap insurer profits.

That being said, there are reasonable concerns that even these MLR ratios serve as ineffective limit on the profits of firms. This is particularly true in markets where insurers and providers are owned by the same firm. It is not hard to imagine a firm manipulating its internal transfer prices to increase the medical spending of the insurer. For example, imagine an integrated payer-provider collects $200 per month in premiums for customers and these customers average medical spending of $150 – with $75 at providers owned by the integrated firm and $75 at independent providers. With an MLR of 85% -- the insurer would have to pay a rebate to customers of $20. However, if the integrated firm raised prices at its provider by $20, it would satisfy the MLR without paying any rebates to customers. In such a situation the MLR would be largely ineffective and much of the benefits or coordination would be captured by the merged firm. Lacking vigorous competition in the insurance market, this integrated firm would continue to charge high premiums which could result in an inefficiently low quantity of insurance being purchased.

It is important to note that the market transforming to a structure that can only support a few large and complex firms is not guaranteed and would be based on the relative cost and complexity of the activities of the merged firms. In addition, even in this situation it could be that more welfare is created – even if that welfare is captured by firms rather than consumers.

C. Concerns of Decreased Access to Critical Inputs for Competitors

A final concern that has been raised by some is that a merged CVS-Aetna may attempt to decrease a competitor's access to a vital input such as CVS retail pharmacy locations. I find this to be an unconvincing concern. First, this option was broadly available to CVS following the merger with Caremark. Second, while it is true that this might make Aetna a more attractive insurance product, Aetna ultimately has a relatively small market share in the market. Thus, while I don't have access to the full set of internal documents necessary to say this with complete certainty, it seems extremely unlikely it would be profit maximizing for the merged CVS-Aetna to give up on the retail revenue from other insurers in order to craft a marginally better product for Aetna.

VI. Conclusion

Health care in the United States is entering an interesting and complex time period where firms are attempting to discover the assets and activities that will be necessary for success. While the correct configuration going forward is uncertain – what should be painfully clear is that the existing health firms in the United States cannot currently have the assets that will be necessary for success.

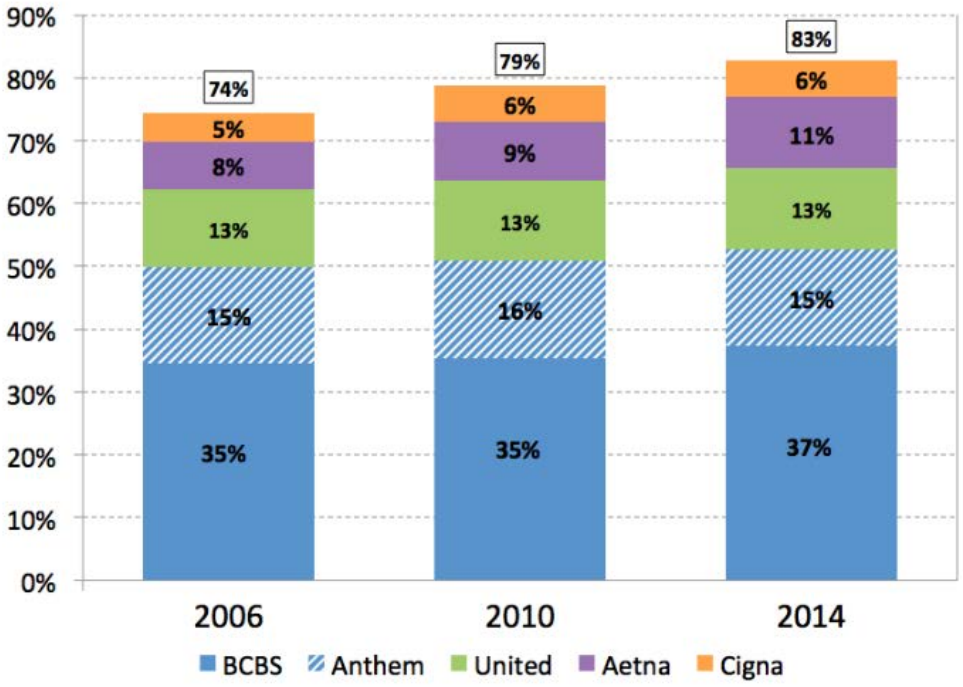
After all, these firms have spent the past several decades creating a combination of assets and activity systems that were well positioned to compete in the world of fee for service health care. If that world is to transform into something that more closely approximates value based care (i.e. a model loosely defined as paying for health rather than health care services) firms will need new asset configurations.

The proposed merger between CVS Health and Aetna represents one potential asset reconfiguration. The merged firm will combine the assets of a PBM, insurance company, a chain of over 9,800 retail pharmacies and 1,100 retail health clinics into a single firm. That being said, the future prospects of this venture remain uncertain. While there is a clear potential path whereby this combination of assets could create more social welfare, this is not a certain proposition. At a minimum, there is a meaningful degree of execution risk whereby the managers of the firm may simply find this broad combination of assets to be too unwieldly to manage. While the firms have certainly considered and planned for this possibility, it is also quite possible that they have misjudged their ability to run such a complex enterprise. It would certainly not be first case in corporate history of this occurring.

In addition, it could be that there are limited gains for coordinating care even for the chronically ill. Certainly to date the evidence from the implementation of Accountable Care Organizations (ACOs) provides limited reasons for enthusiasm on this front.[xxxiv] For these organizations the largest savings have come primarily by managing the use of both post-acute care services and expensive hospital outpatient departments – a task that a firm may be able to accomplish without operating a chain of retail health clinics.[xxxv]

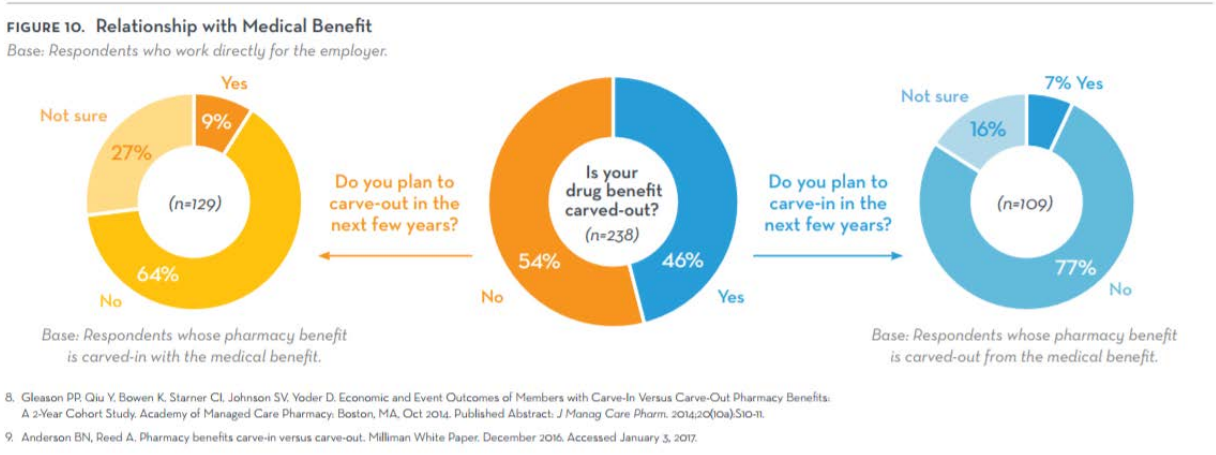
Ultimately, absent clear merger-specific concerns of potential harm, questions of whether the merger will succeed in creating value for the merged firm is a concern for shareholders more than policymakers or regulators. It is not the government's job to protect firms from making potential bad decisions that harm shareholders, only those that could harm consumers. In this case, there are many reasons to think that a merger between CVS and Aetna could overcome imperfections in the existing health care market and increase welfare. That being said, there are still remaining concerns that a lack of competition for the integrated firm will result in this merger primarily benefiting the newly merged firm. As a result, policymakers and regulators would be wise to continue to monitor the level of competition and the performance of firms in this evolving market. However, non-specific fears that an increase in social welfare may not be shared seem like a poor reason to halt value creating activities.

Figure 1
Estimated National Market Share of 4 Largest Insurers



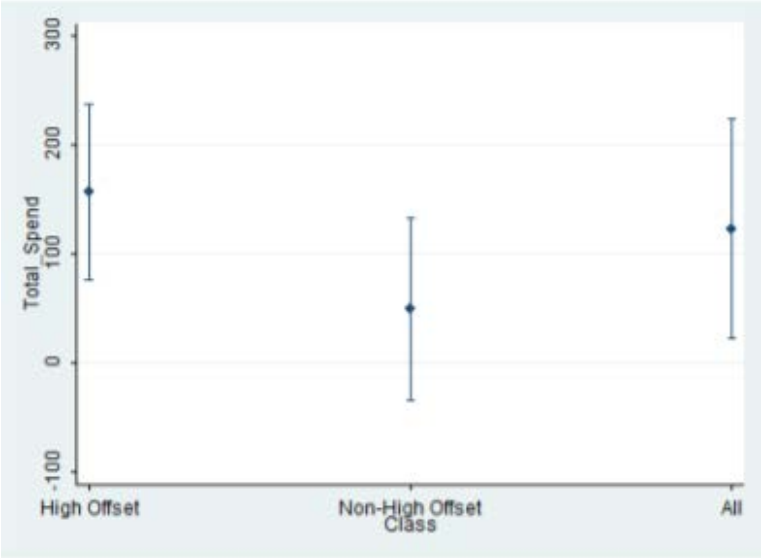
Source: Leemore S. Dafny, "Health Insurance Industry Consolidation: What Do We Know From the Past, Is It Relevant in Light of the ACA, and What Should We Ask?", Senate Committee on the Judiciary, Subcommittee on Antitrust, Competition Policy, and Consumer Rights, September 22, 2015

Figure 2



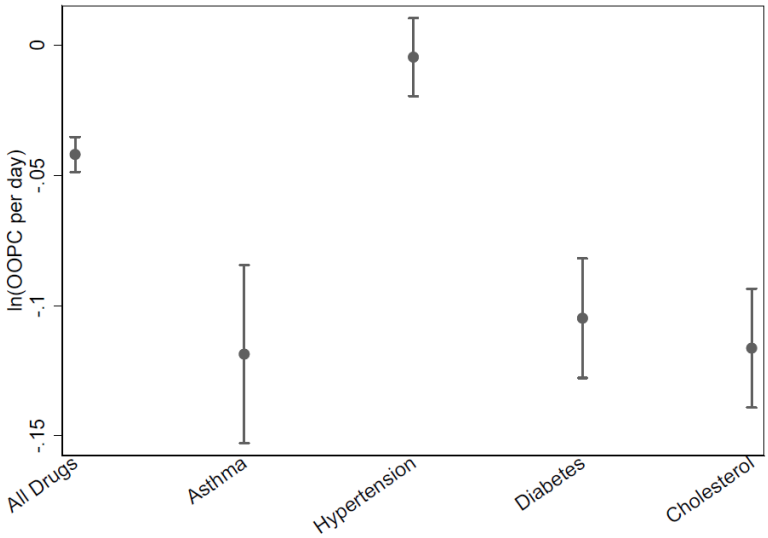
Source: *2017 Trends in Drug Benefit Design Report*, Pharmacy Benefit Management Institute

Figure 3
Impact of MA-PD Enrollment on Utilization by Drug Class



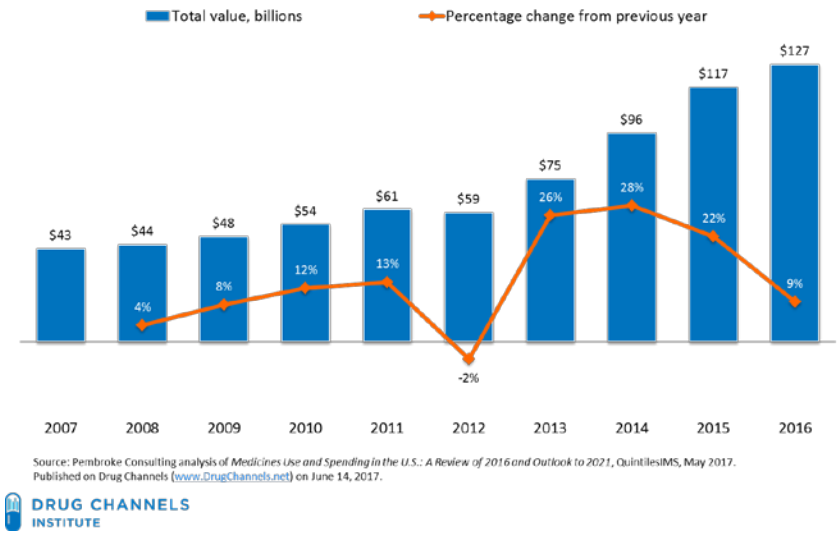
Source: Starc and Town (2017)

Figure 4
Out-of-Pocket Cost Effects by Drug Class



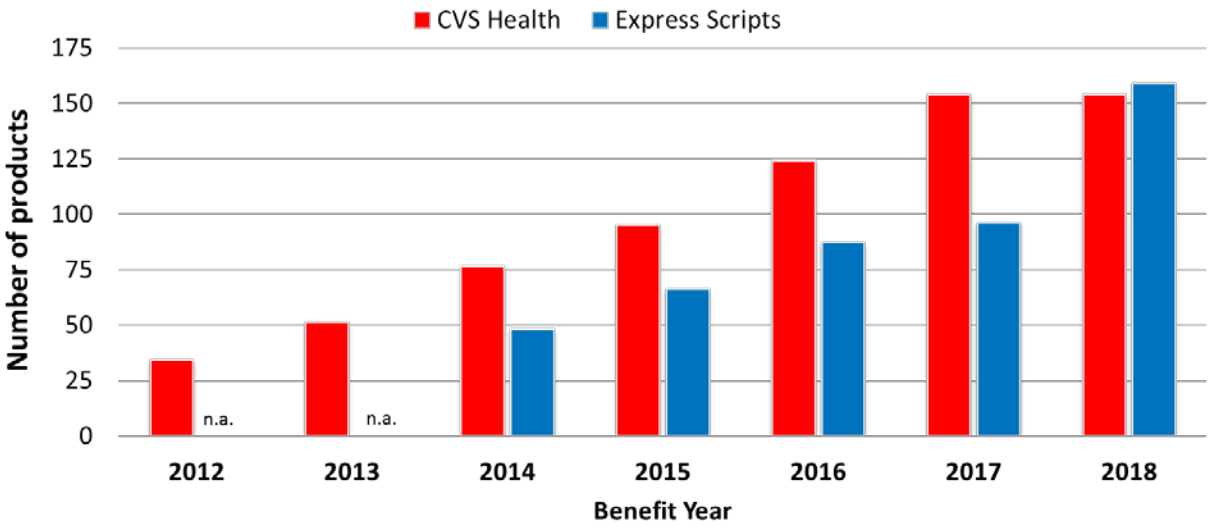
Source: Starc and Town (2017)

Figure 5
Pharmaceutical Manufacturers Off-Invoice Discounts, Rebates, and Price Concessions
2007-2016



Source: Drugchannels.net, available at:
http://www.drugchannels.net/2017/06/new-data-show gross-to-net-rebate.html

Figure 6
Number of Products on CVS Health and Express Scripts Exclusion Lists
2012-2018



Note: Express Scripts did not publish exclusion lists for 2012 and 2013.
Source: Pembroke Consulting analysis of company reports

Published on Drug Channels (www.DrugChannels.net) on August 3, 2017.

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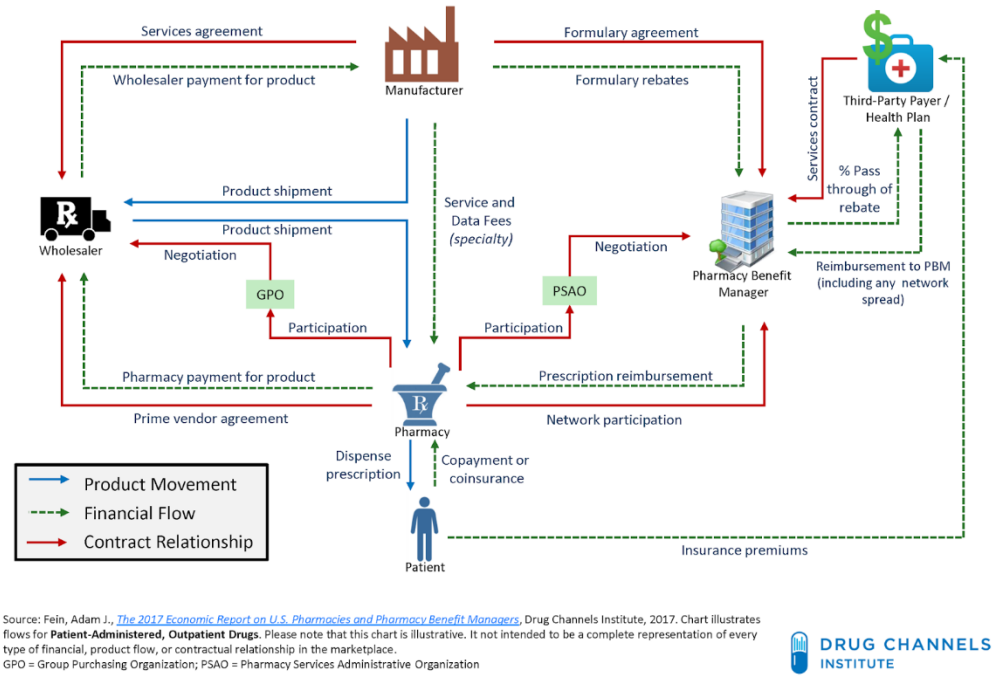
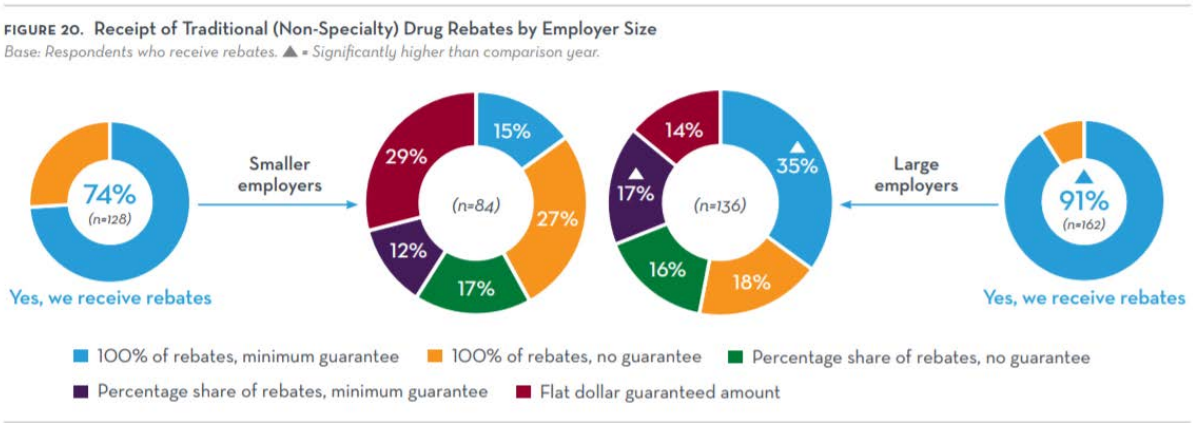
Source: Drugchannels.net, available at:
http://www.drugchannels.net/2017/08/whats-in-whats-out-new-2018-cvs-health.html

Figure 7
Flow of Payments and Contractual Relationships for U.S. Retail Outpatient Drugs



Source: Drugchannels.net, available at: http://www.drugchannels.net/p/about-blog.html

Figure 8



Source: *2017 Trends in Drug Benefit Design Report,* Pharmacy Benefit Management Institute

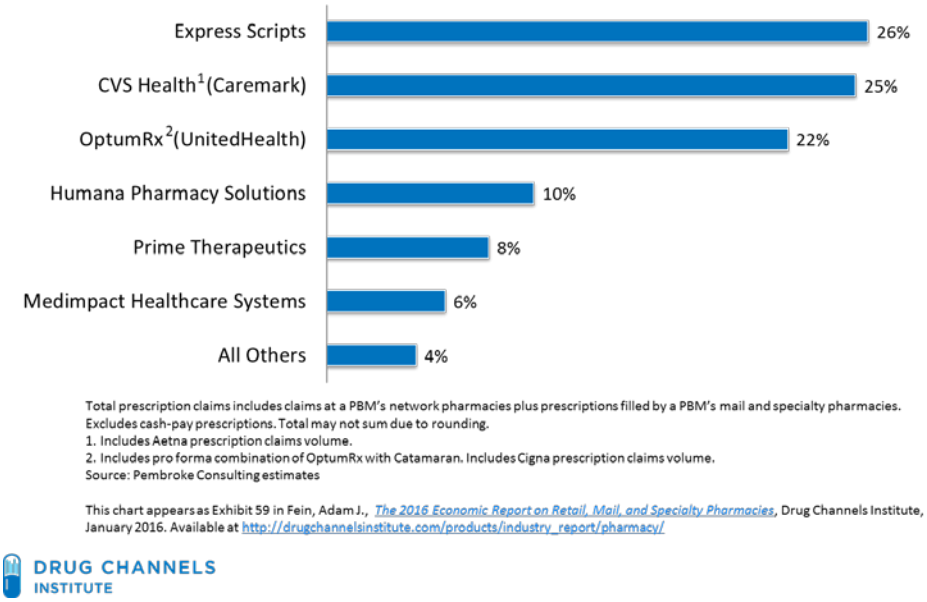
Figure 9
Pharmacy Benefit Manager Total Adjusted Scripts/Share
2011

MHS	773.0	20.8%
ESRX	754.2	20.3%
ESRX with MHS	1,527.2	41.1%
CVS	1034.3	27.8%
OptumRx	527.3	14.2%
Prime	171.0	4.6%
CHSI	181.6	4.9%
SXC	86.2	2.3%
Others	190.2	5.1%
Total	3,717.7	100.0%

Source: Company documents, IMS Health, Barclays Capital estimates

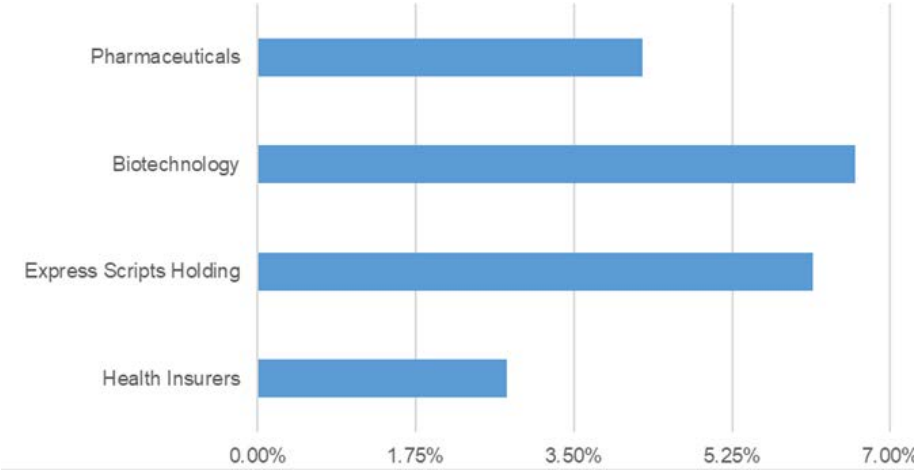
Source: Drugchannels.net, available at:
http://www.drugchannels.net/2011/07/esrx-mhs-strategic-and-market-analysis.html

Figure 10
PBM Market Share by Claims, 2015



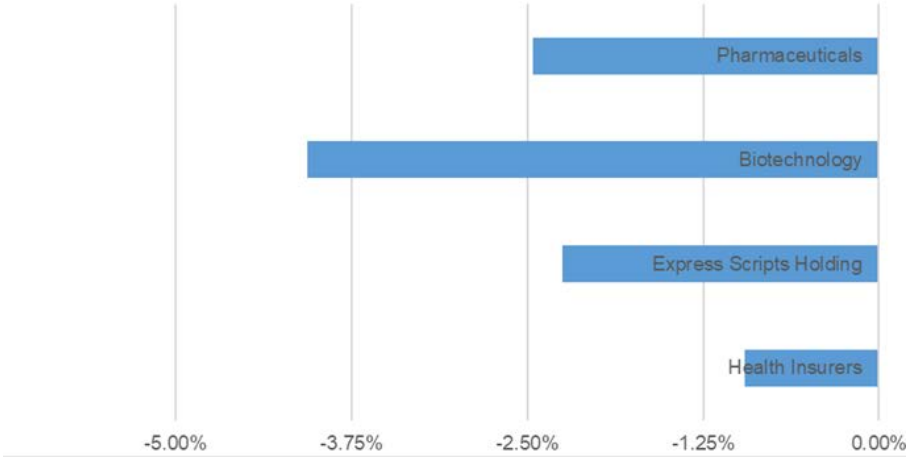
Source: Drugchannels.net, available at:
http://www.drugchannels.net/2016/09/why-walgreensprime-deal-could-transform.html

Figure 11
Stock Price Following 2016 Presidential Election



Source: Garthwaite and Scott-Morton (2017)

Figure 12
Stock Price Change Following Time Magazine Interview



Source: Garthwaite and Scott-Morton (2017)

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