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Medicare Part D: Time for Re-Modernization?

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Abstract**Objective:** To understand the mechanisms that have held Part D beneficiary premiums stable despite increasing reinsurance subsidies.**Data Sources:** Secondary data on Part D plan bids, federal subsidies, and claims from 2007 through 2015.**Study Design:** Comparisons of standardized, enrollment-weighted average Part D plan bids and reinsurance bids with plan and reinsurance liability calculated from Part D claims data.**Data Collection/Extraction Methods:** Part D plan payment data were merged with premium data to derive plan bids, which were merged with claims-based spending measures.**Principal Findings:** Plan bids and reinsurance bids increasingly diverged from the spending observed in the claims data over the study period. This divergence was attributable to the growth in rebates and systematic under-bidding of expected reinsurance payments, enabling plans to hold premiums low and collect excess federal subsidies of approximately 3 percent of total Part D spending in 2015.**Conclusions:** Revenue from rebates and excess federal subsidies via reinsurance reconciliation has played an important role in holding Part D premiums low, despite increasing federal reinsurance subsidies. While policy makers should consider implementing reforms to address these misincentives in the program, doing so is likely to result in unavoidable premium increases to levels more reflective of actual net spending.**KEYWORDS**

Medicare Part D, rebates, reform, reinsurance

1 | INTRODUCTION

The Medicare Part D program has received considerable attention recently. Policy makers and analysts have proposed numerous reforms to address high and rising prescription drug spending and, in particular, the growth in federal reinsurance spending. While Part D coverage is delivered exclusively through private plans, the program is heavily subsidized by the federal government. These federal subsidies take two primary forms: the “direct subsidy,” which reduces

beneficiary premiums by providing capitated payments to plans, and the “reinsurance subsidy,” whereby the federal government pays 80 percent of all spending that occurs once a beneficiary reaches catastrophic coverage. (The federal government also provides additional premium and cost-sharing subsidies for low-income beneficiaries.) In 2019, beneficiaries reach catastrophic coverage after \$5100 in “true out-of-pocket” spending, which equates to about \$8140 in total drug spending for beneficiaries who do not receive low-income subsidies (and less, on average, for those who do).¹

These federal reinsurance subsidies have grown rapidly in recent years—from \$33.97 per member per month in 2006 to \$79.40 in 2018 (Figure 1)—and, since 2014, have represented the largest component of federal spending on the Part D program.² This growth in federal reinsurance subsidies reflects the fact that Part D spending has become increasingly concentrated in catastrophic coverage, growing from 18 percent of total Part D spending in 2007 to 38 percent in 2016.³ However, analysts have suggested that the federal reinsurance program may in fact play a role in this growth in catastrophic spending, because plans have a relatively limited incentive to aggressively manage spending for high-cost beneficiaries since most of that liability is borne by the federal government rather than the plan.^{4,5} Additionally, the fact that beneficiaries move through the benefit phases and into catastrophic coverage according to cost-sharing based on the list (pre-rebate) price of drugs may create incentives for plans to prefer drugs with higher list prices and higher rebates.⁶ Concerns about these misincentives in program design have led to a number of recent proposals to reform the Part D program. For example, bicameral policy makers,^{7,8} the Trump administration,⁹ and policy analysts^{10,11} have proposed reforms to the federal reinsurance program that would considerably increase plan liability in the catastrophic coverage region, while other proposals have focused on moving to a market where beneficiary cost-sharing is based on net (post-rebate) rather than list prices.¹²

However, despite the considerable growth in spending on federal reinsurance subsidies, beneficiary premiums have remained remarkably stable over time—from \$32.30 per member per month in 2006 to \$35.02 in 2018 (Figure 1). This is surprising because the Part D program design features are such that increasing federal

reinsurance subsidies leave fewer dollars for direct subsidies (which in turn reduce beneficiary premiums). In general, CMS sums plan bids and reinsurance bids to calculate a total bid and then provides a total federal subsidy equal to 74.5 percent of that total bid (Table 1). CMS first allocates the expected reinsurance subsidy from this total federal subsidy; any remaining federal subsidy dollars are then applied to the direct subsidy to reduce beneficiary premiums below the plan bid. Thus, as reinsurance subsidies increase as a share of overall subsidies, there are fewer dollars available to directly reduce beneficiary premiums.

These low and stable beneficiary premiums despite increasing reinsurance subsidies reflect the fact that plan bids have decreased considerably over time—from \$80.43 per member per month in 2006 to \$57.93 in 2018 (Figure 1). While the incentive for plans to decrease their bids in order to hold beneficiary premiums low is clear—evidence suggests that beneficiaries heavily weight premiums in their plan selection^{13,14} and premiums above a particular threshold render plans ineligible for auto-assignment of beneficiaries who receive low-income subsidies—the mechanism by which plans have been able to decrease their bids yet stay profitable is less clear, since neither total Part D spending nor plan-covered spending systematically decreased over this time period (Figure S1).

Despite general satisfaction about these low and stable Part D premiums,¹⁵ there has been rather limited attention paid to the factors that have enabled them to persist. But understanding the dynamics and market trends that affect beneficiary premiums is important both for assessing their sustainability (absent any program changes) and for evaluating the impact of potential reforms to this program. I therefore help to address this gap in the literature

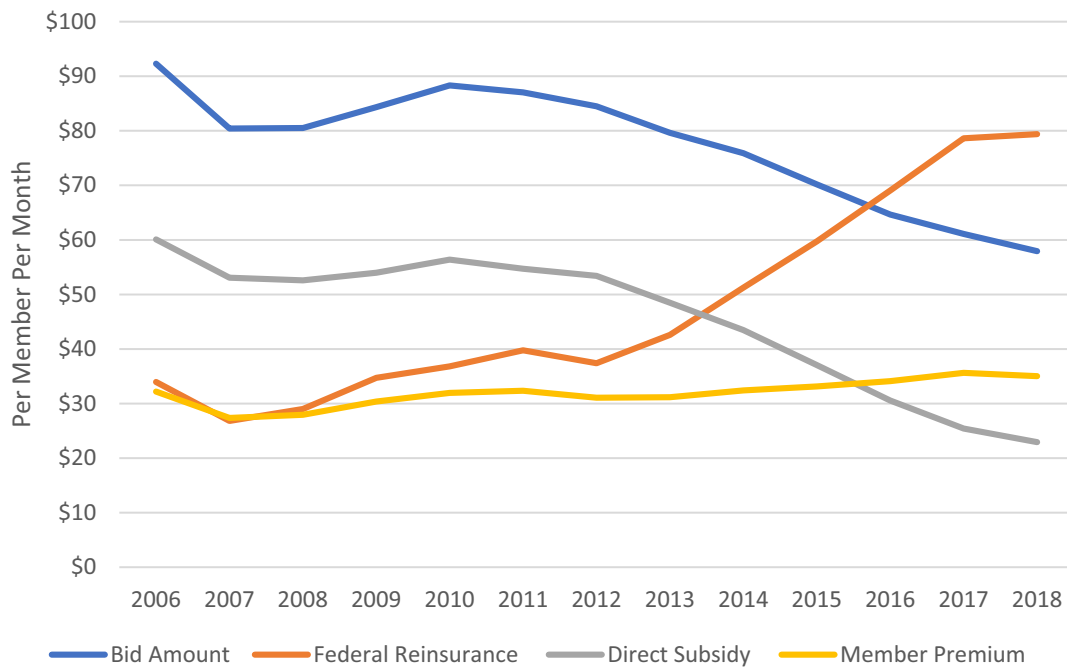


FIGURE 1 National average Part D program parameters: 2006-2018. Actual national average Part D program parameters from CMS' annual releases of Part D National Average Bid Amount and Other Part C & D Bid Information [Color figure can be viewed at wileyonlinelibrary.com]

	Program parameter	Calculation	Amount (PMPM)
(A)	Plan bid		\$70
(B)	Reinsurance bid		\$60
(C)	Total bid	$A + B = \$70 + \60	\$130
(D)	Total federal subsidy	$C \times 74.5\% = \$130 \times 74.5\%$	\$96.85
(E)	Direct subsidy	$D - B = \$96.85 - \60	\$36.85
(F)	Beneficiary premium	$A - E = \$70 - \36.85	\$33.15

TABLE 1 Illustrative, market-level example of Part D bids and subsidies

Note: There are many more nuances to the bidding program related to things like how a given plan's bid compares to the market average, whether a plan covers beneficiaries who qualify for low-income subsidies, and the risk score of the plan's beneficiaries not captured by this market-level summary. A given plan's actual beneficiary premium will vary depending on how its bid compares to the enrollment-weighted market average.

by evaluating trends in the empirical relationship between Part D plan bids, federal subsidies, beneficiary premiums, and claims-based measures of spending from 2007 through 2015. In particular, I evaluate the impact of two important features on beneficiary premiums: rebates and reinsurance reconciliation, under which the federal government pays excess subsidies to plans when actual reinsurance spending is greater than predicted. Specifically, I evaluate the role that rebates and reinsurance under-bidding have had on the growing divergence between plan bids and program spending as observed in the claims data, and evaluate the impact of potential policy changes that would reform rebates and the reinsurance program in Part D.

2 | DATA AND METHODS

2.1 | Data

The primary data were 2007 through 2015 CMS Part D plan payment data, CMS Part D plan report data, CMS Part D plan reconciliation data, and a 100 percent sample of Part D enrollment and prescription drug event files accessed through the CMS Virtual Research Data Center (VRDC).

The plan payment data include the direct subsidy, reinsurance payments, and average enrollee risk scores for each Part D plan. The plan report files include beneficiary premiums for each plan. The reconciliation data files include additional reinsurance payments, generally made to plans, and risk corridor payments, generally made by plans to the federal government. The prescription drug event files provide detailed information on Part D spending for each beneficiary, including by benefit phase and payer (eg, plan vs patient liability). I use plan identifiers to link spending by beneficiaries in a given plan to that plan's bid and reconciliation data.

2.2 | Methods: plan bids and spending

I calculate plan bids by combining data from the plan payment and plan report files. In the plan payment data, each plan's direct subsidy is calculated as follows:

$$\text{Direct Subsidy} = (\text{Plan Bid} \times \text{Average Risk Score}) - \text{Beneficiary Premium}$$

Thus, to calculate each plan's bid, I merge the plan payment data with Part D basic premium data from the plan report files and calculate each plan's bid as follows:

$$\text{Plan Bid} = (\text{Direct Subsidy} + \text{Part D Basic Premium}) / \text{Average Risk Score}$$

This calculation is only valid for stand-alone prescription drug plans (PDPs) because the publicly available premium data for Part D plans sold in conjunction with Medicare Advantage plans (MA-PDs) reflect Part D premiums after any "buy-down" from Medicare Advantage supplemental rebates. Since it is quite common that MA-PDs use supplemental rebates to buy-down Part D premiums, using these premium data would artificially inflate plan bids as calculated by this formula. Thus, I restrict my analysis to only stand-alone PDPs. I also exclude employer plans because they are not included in the bid data and enhanced PDPs because their plan liability reflects coverage that is actuarially more generous than the basic benefit, though their bid (in these data) reflects the basic benefit only.

I compare these plan bids to plan liability from the claims data. To calculate plan liability from the claims data, I sum the plan payment variables for all claims for all beneficiaries in each plan included in the analytic sample. In the claims data, these plan payment variables include spending in catastrophic coverage that is financed via the federal reinsurance program. Thus, to calculate actual plan liability in the catastrophic coverage region excluding that covered by the federal reinsurance program, I calculate actual plan liability as 15/(80 + 15) or 15/95ths of plan payments that occur in the catastrophic coverage region, with the remaining 80/95ths categorized as reinsurance liability.

To compare plan bids to plan liability from the claims data, I sum plan liability from the claims for each plan (excluding reinsurance liability) and divide by the plan-level average enrollee risk score, since the bids have been standardized by CMS to a beneficiary of 1.0 risk score. I then construct an enrollment-weighted average of plan bids

and plan liability from the claims data for all plans in the analytic sample for each year. Unlike the direct subsidy data, the reinsurance payments in the plan payment data are not standardized to a beneficiary of 1.0 risk score, but rather reflect the actual risk scores of the plan's enrollees. I therefore standardize these reinsurance payments by dividing by the plan's average risk score. Likewise, I standardize reinsurance liability as calculated from the claims data by dividing total reinsurance spending for each plan by that plan's average risk score. I then construct an enrollment-weighted average of reinsurance bids and reinsurance liability from the claims data for a standard risk beneficiary. All numbers are reported at the per-member per-month level by dividing by enrollment. All spending measures are expressed in nominal dollars.

Spending measures calculated from the claims data reflect the list (pre-rebate) price of drugs, though actual plan liability should reflect the net cost to the plan after any rebate collections. Thus, while I first report comparisons of bids to unadjusted plan liability measures, I then adjust these plan liability measures derived from the claims data to reflect rebate revenue. While I do not have data on rebates received for each claim, I attempt to account for rebates in aggregate by applying the estimates of Part D rebates as a share of total spending in each year from the Medicare Trustees Reports (Figure S2).¹⁶ To do so, I compute total spending (paid by all parties) for all beneficiaries at the plan level and multiply that total spending by the Trustees' reported rebates as a share of total spending in that year to estimate total rebate revenue. I subtract these estimated rebates from plan liability and reinsurance liability by separately calculating rebates on spending above and below the catastrophic coverage threshold to allocate rebates to reinsurance liability as measured by the claims data accordingly.

2.3 | Methods: reinsurance reconciliation and risk corridor payments

When plans inaccurately bid their expected federal reinsurance subsidies compared to 80 percent of actual net spending incurred by beneficiaries in catastrophic coverage, they reconcile with CMS at the end of the year. That is, if a plan's reinsurance bid was too high, they reimburse CMS for the excess payments, whereas if their bid was too low, they collect additional reinsurance reconciliation payments from CMS.

Thus, in addition to reinsurance bids, I also analyze reinsurance reconciliation payments to ensure a complete picture of federal spending on the reinsurance program. To do so, I divide total reconciliation payments by total enrollment to construct a measure of average reinsurance reconciliation payments per member per month.

However, the CMS reconciliation data are provided at the contract rather than the plan level, so the analytic sample for this analysis is broader than that included in the analyses described above. (A contract is a higher level than a plan. Contracts generally include multiple plans and can include Part D plans of different plan types, such as PDPs and the Part D portion of MA-PDs. While I restrict included contracts to those that include at least one plan in my analytic sample, the contract-level data generally include additional

plans.) This does not suffer from the same limitations described above though, because it is simply a calculation of reconciliation payments at the contract level divided by enrollment (which I also measure at the contract level) and is not directly linked to plan-level spending measures derived from the claims data.

Finally, the federal government shares the risk of a Part D plans' potential for excess profits or losses through the risk corridor program. That is, if a plan makes excess overall profits for the year (ie, if actual spending is much lower than anticipated spending), then they pay a portion of those excess profits back to the federal government. Likewise, if a plan incurs excess overall losses for the year, then they receive an additional payment from the federal government to offset a portion of those excess losses.

Thus, I also evaluate these risk corridor payments to capture a broader picture of federal subsidies. Like the reinsurance reconciliation data, these risk corridor payment data are also provided at the contract level, so I follow the same analytic structure to compute contract-level risk corridor payments divided by contract-level enrollment.

3 | RESULTS

3.1 | Descriptive statistics

The analytic sample of basic stand-alone PDPs for the analyses comparing plan bids and reinsurance bids to liability from the claims data includes an average of 16.1 million beneficiaries per year over the nine-year study period (approximately 44 percent of total Part D enrollees). The share of total Part D beneficiaries included in the analytic sample decreases somewhat over time, as a higher fraction of overall Part D beneficiaries are enrolled in MA-PDs, employer plans, and enhanced PDPs in later years in the study. In 2015, the enrollment-weighted average plan bid and reinsurance bid of the plans in the analytic sample for a beneficiary of 1.0 risk score were \$70.20 and \$100.47 per member per month, respectively.

The plan bids and reinsurance bids that I calculated for the analytic sample are generally reflective of the trends seen in the actual overall Part D market (Figure S3). Plans in the analytic sample have somewhat higher reinsurance bids than the overall market average, particularly in later years, which is consistent with other analyses that have shown that PDPs have higher average reinsurance payments than MA-PDs.¹⁷ While my analysis is internally consistent as it includes plan bids and claims-based plan liability for the exact same set of plans, nonetheless it is reassuring that the trends in the calculated plan bids generally reflect those observed in the actual Part D market.

3.2 | Comparison of plan bids with claims-based measures

In the early years of the study period, average plan bids and reinsurance bids tended to track relatively closely with average claims-based measures of plan liability and reinsurance liability, respectively (Figure 2). For example, in 2009, the enrollment-weighted average

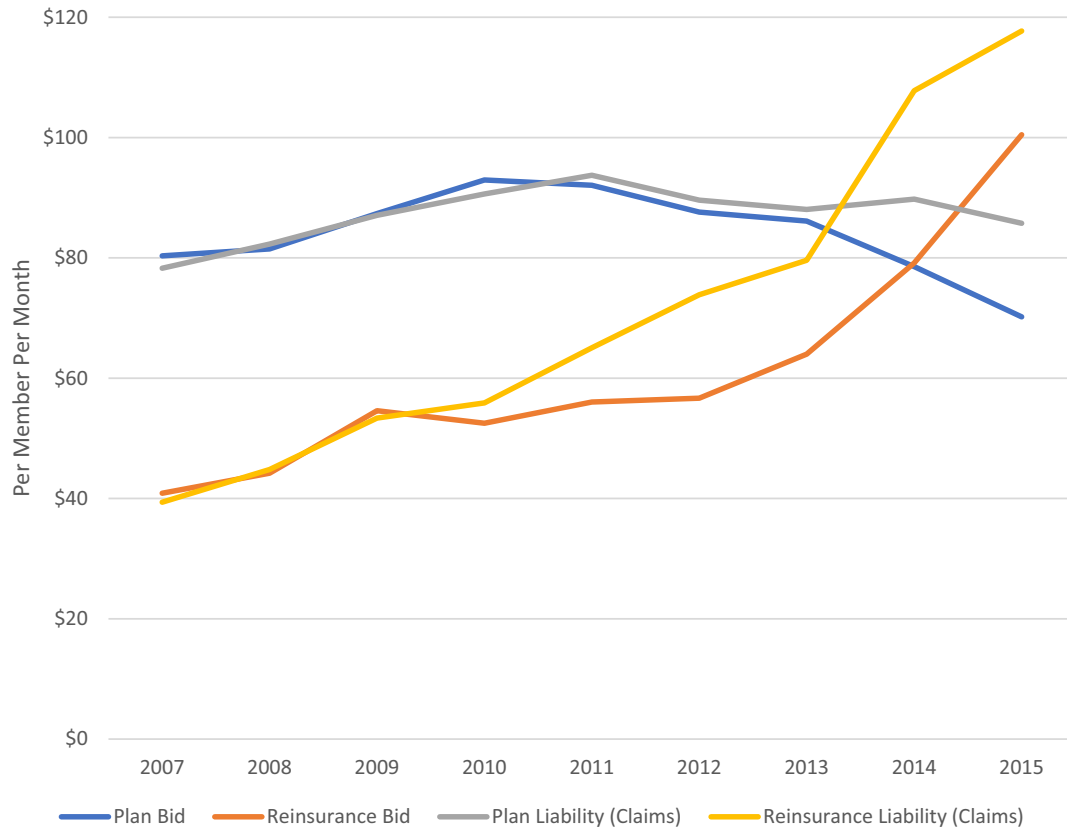


FIGURE 2 Relationship between plan bids and plan spending. The sample includes all individual, basic, stand-alone prescription drug plans (PDPs) in each year. Plan bids and reinsurance bids are estimated from the Part D plan payment data as described in the text. Plan liability and reinsurance liability are calculated based on a 100 percent sample of Part D claims data for enrollees in plans included in the analytic sample, as described in the text [Color figure can be viewed at wileyonlinelibrary.com]

standardized plan bid in the analytic sample was \$87.37 per member per month, and the enrollment-weighted average standardized plan liability as calculated from the claims data was \$87.08 per member per month. In the same year, the enrollment-weighted average standardized reinsurance bid was \$54.60 per member per month and the enrollment-weighted average standardized reinsurance liability as calculated from the claims data was \$53.37 per member per month.

However, in the later years of the study period, the trends in the bids diverge from those in the claims-based liability measures. Plan bids begin to fall below plan liability observed in the claims data starting in 2014, while reinsurance liability observed in the claims data begins to consistently exceed reinsurance bids starting around 2011. In 2015, the enrollment-weighted average standardized plan bid in the analytic sample was \$70.20 per member per month, and the enrollment-weighted average standardized plan liability as calculated from the claims data was \$85.75 per member per month. In the same year, the enrollment-weighted average standardized reinsurance bid was \$100.47 per member per month and the enrollment-weighted average standardized reinsurance liability as calculated from the claims data was \$117.72 per member per month.

However, as described above, the claims-based measures reflect the list price of drugs, whereas plan bids should reflect the net liability to the plan after accounting for any rebates. After adjusting

the claims-based spending measures to account for rebates, average plan bids and claims-based plan liability follow a similar trend over the full study period—with claims-based plan liability consistently falling below plan bids (Figure 3). Much of this difference reflects plans' administrative expenses and profits, which in the overall Part D market, averaged about 12-14 percent of total gross plan benefit payments over the study period.¹⁶ However, some portion of this difference likely also reflects that Part D plans, on average, tend to overestimate their plan bids to earn higher profits, though a portion of those excess profits is returned to the federal government through risk corridor payments.¹⁴ In fact, in all years of the study period, plans on average made risk corridor payments to the federal government—indicative of these excess profits—ranging from a low of 39 cents per member per month in 2014 to a high of \$3.08 per member per month in 2012 (Figure 4).

Even after adjusting for rebates, the reinsurance bids continue to fall below the claims-based reinsurance liability. The gap that persists between reinsurance bids and rebate-adjusted claims-based reinsurance liability is reflected in average reinsurance reconciliation payments, which increased in magnitude in the later years of the study period, from \$1.86 per member per month in 2010 to \$19.84 in 2015 (Figure 4). While some relatively small amount of either positive or negative reconciliation is to be expected given that

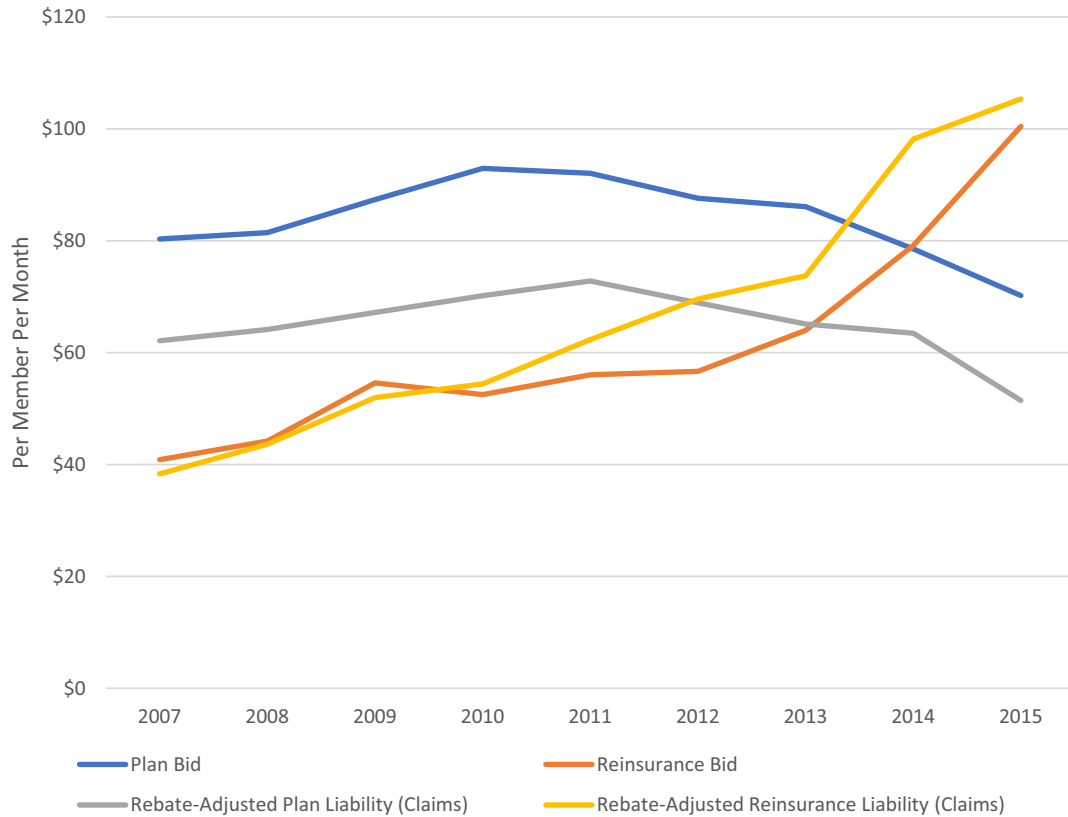


FIGURE 3 Relationship between plan bids and rebate-adjusted plan spending. The sample includes all individual, basic, stand-alone prescription drug plans (PDPs) in each year. Plan bids and reinsurance bids are estimated from the Part D plan payment data as described in the text. Plan liability and reinsurance liability are calculated based on a 100 percent sample of Part D claims data for enrollees in plans included in the analytic sample, as described in the text. Plan liability and reinsurance liability are adjusted according to the overall estimate of rebates as a share of total Part D spending for each year as reported in the Medicare Trustees Reports [Color figure can be viewed at wileyonlinelibrary.com]

plans must estimate reinsurance payments in advance, this pattern of reconciliation payments suggests that plans were systematically under-bidding their expected reinsurance subsidies in the later years of the study period. The highest average reconciliation payment of \$21.61 per member per month in 2014 may reflect the combination of both the trend in systematic under-bidding in conjunction with some degree of truly unexpected higher spending related to the release of high-cost drugs to treat hepatitis C.¹⁸

3.3 | Effect of reinsurance reconciliation and risk corridors

I calculate the implications of these additional reinsurance reconciliation payments on overall federal subsidies based on the actual national Part D plan bids and reconciliation bids in 2015. (I use the overall national program numbers rather than those calculated in the analytic sample because this analysis of reconciliation data includes a broader sample of all contracts.)

In 2015, the actual national average plan bid and reinsurance bid were \$70.18 and \$59.74 per member per month, respectively (Figure 1). Thus, the total bid was \$129.92 and the total expected

federal subsidy was 74.5 percent of that, or \$96.79 per member per month (Table S1):

$$\begin{aligned} \text{Total Bid} &= \text{Plan Bid} + \text{Reinsurance Bid} = \$70.18 + \$59.74 = \$129.92 \\ \text{Total Federal Subsidy} &= \text{Total Bid} \times 74.5\% = \$129.92 \times 74.5\% = \$96.79 \end{aligned}$$

Subtracting the \$59.74 reinsurance subsidy left \$37.05 for the direct subsidy, resulting in an average beneficiary premium of \$33.13:

$$\begin{aligned} \text{Reinsurance Subsidy} &= \text{Reinsurance Bid} = \$59.74 \\ \text{Direct Subsidy} &= \text{Total Federal Subsidy} - \text{Reinsurance Subsidy} = \\ &\quad \$96.79 - \$59.74 = \$37.05 \\ \text{Beneficiary Premium} &= \text{Plan Bid} - \text{Direct Subsidy} = \$70.18 - \$37.05 = \$33.13 \end{aligned}$$

However, based on my finding of an average additional reinsurance reconciliation payment of \$19.84 per member per month, reinsurance subsidies were actually \$79.58 per member per month:

$$\begin{aligned} \text{Reconciled Reinsurance Subsidy} &= \text{Reinsurance Subsidy} + \text{Reinsurance} \\ \text{Reconciliation} &= \$59.74 + \$19.84 = \$79.58 \end{aligned}$$

■ Reinsurance Reconciliation ■ Risk Corridors

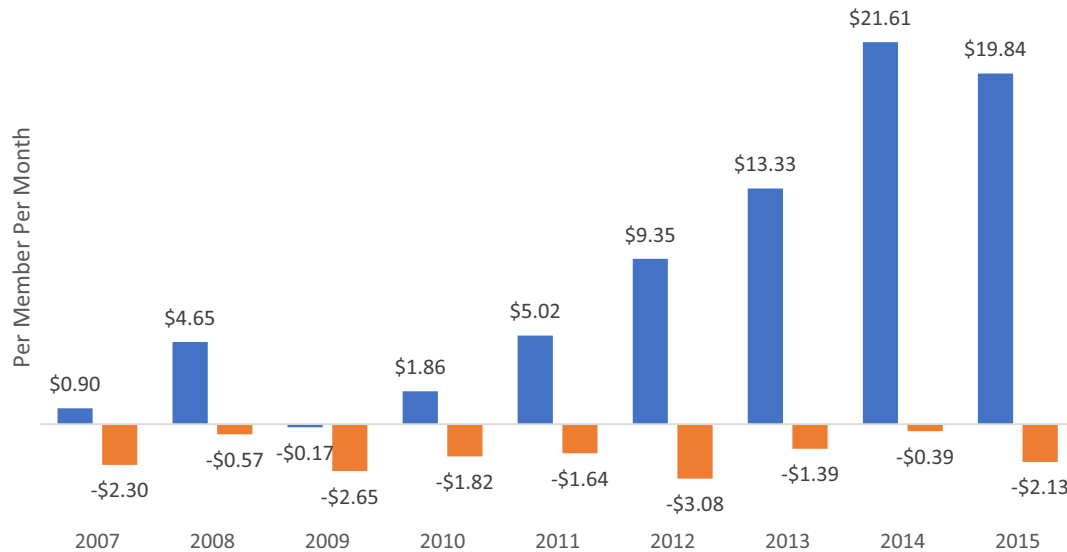


FIGURE 4 Average reinsurance reconciliation and risk corridor payments. The sample includes all Part D contracts included in the Part D reconciliation data that have at least one plan in the analytic sample in each year. Per-member per-month estimates are calculated according to enrollment in all plans in included contracts (including enrollment in plans not included in the analytic sample) [Color figure can be viewed at wileyonlinelibrary.com]

Plans also made an average risk corridor payment of \$2.13 per member per month in 2015, implying that their plan bids were too high relative to actual net, post-reconciliation spending. Thus, had plans accurately bid both their plan bids and reinsurance bids, the total corrected bid would have been \$145.50:

$$\begin{aligned} \text{Total Corrected Bid} &= \text{Plan Bid} - \text{Risk Corridors} + \text{Reconciled} \\ \text{Reinsurance Subsidy} &= \$70.18 - (\$2.13 \times 2) \\ &+ \$79.58 = \$65.92 + \$79.58 = \$145.50 \end{aligned}$$

The average risk corridor payment of \$2.13 is multiplied by two because plans keep 50 percent of the excess profits that result from spending that falls 5-10 percent lower than their target amount. Plans keep only 20 percent of excess profits that result from spending that falls more than 10 percent lower than their target amount, but they keep 100 percent of profits that result from spending that falls 0-5 percent lower than their target amount. As a result, multiplying by two is likely a conservative estimate of the extent to which plans' bids are off, but approximate an "accurate" plan bid where accuracy reflects the full profits that a plan can make without triggering a risk corridor payment, on average.

Under this corrected bid, the total federal subsidy would have been \$108.40 ($=\$145.50 \times 74.5\%$) rather than the \$114.50 subsidy generated by the \$96.79 expected federal subsidy plus the additional \$19.84 reconciliation payment (minus the \$2.13 risk corridor payment).

That is, through the reconciliation process, the federal government subsidized 79 percent of program spending ($=\$116.63/\147.63) rather than the intended 74.5 percent, though

the risk corridor payment reduced this to an overall subsidy of 77.6 percent ($=\$114.50/\147.63). Had plans accurately bid their reinsurance spending and plan bids (ie, generated no risk corridor payments), beneficiary premiums would have been \$37.10 per member per month ($=\$65.92 - \28.82) or about 12 percent higher than the actual \$33.13 per member per month.

3.4 | Effect of rebates

I next highlight the effect that rebates have on reducing premiums by estimating the impact of a potential policy change that would base beneficiary cost-sharing on net rather than list price (ie, a requirement to share rebates with beneficiaries at the point of sale). Under such a policy, the spending trends observed in the claims data would reflect trends in net spending and beneficiary cost-sharing would be reduced (absent other changes). While such a policy could have both supply- and demand-side dynamic effects, estimating these potential effects is beyond the scope of this analysis. Instead, I hold net prices fixed to highlight the premium implications of these reductions in beneficiary cost-sharing. Again, I use the overall program spending numbers and base these estimates on the entire sample of Part D claims data rather than restricting to the analytic sample. Additionally, because I do not need the plan bid and reconciliation data (which are only available through 2015) to construct this estimate, I use 2016 data for these calculations.

Using the 2016 claims data, I aggregate Part D spending by payer above and below the catastrophic threshold and multiply this total spending by the Medicare Trustees' overall 2016 rebate of 19.9 percent to calculate total rebates. For spending that occurs below

the catastrophic threshold, I compute rebates accrued to plans as 19.9 percent of total spending. For spending that occurs above the catastrophic threshold, I compute rebates accrued to plans as 19.9 percent of 15/95ths of total spending, since plans are expected to compute the federal government's reinsurance liability net of rebates. (I do not account for the fact that basing cost-sharing on net rather than list price would shift the distribution of total spending that occurs above and below the catastrophic threshold; this is a limitation of this aggregate analytic approach.)

Following this methodology, I estimate that, in 2016, total rebate revenue was \$55.68 per member per month, with \$37.85 of that accruing to plans to offset their bids (and thus beneficiary premiums) and \$17.82 of that accruing to the federal government in the form of reduced reinsurance liability (Table S2). Under a policy in which rebates are applied at the point of sale, \$15.99 of that \$37.85 would be foregone rebate revenue to plans (ie, plans would also "benefit from" the fact that their share of liability for any given claim would also now be based on the reduced net rather than list price, accounting for the remaining \$21.86). That \$15.99 in foregone rebate revenue would result in lower cost-sharing paid by beneficiaries (\$5.72), lower low-income cost-sharing subsidies paid by the federal government (\$8.12), and lower coverage gap discounts for branded drugs paid by manufacturers (\$2.15). In contrast, because the federal reinsurance program finances such a high share of spending that occurs in catastrophic coverage, most of the \$17.82 in rebates accruing to the federal government would be retained, with slightly lower cost-sharing paid by beneficiaries (\$0.29) and lower low-income cost-sharing subsidies paid by the federal government (\$0.61). As a result of this foregone rebate revenue, plan bids and reinsurance bids would have been higher; while federal subsidies would also increase as a result, beneficiary premiums would have been \$38.41 per member per month or about 13 percent higher than the actual \$34.10 per member per month.

4 | DISCUSSION

Despite a considerable increase in the concentration of Part D spending occurring in the catastrophic coverage region and a concomitant increase in federal reinsurance subsidies, beneficiary Part D premiums have remained remarkably stable over the last decade. Given the design of the Part D subsidy structure, the stability in these beneficiary premiums reflects the fact that plan bids have decreased over this time period, despite the fact that average per beneficiary total and plan-covered spending as measured in the claims data have not decreased.

My findings comparing the plan bids to claims data suggest that plan bids have diverged from the plan liability and reinsurance spending observed in the claims data over time, with both plan bids and reinsurance bids falling considerably below the plan and federal liability observed in the claims data, respectively. These findings are consistent with other recent work finding that beneficiary premiums are not strongly correlated with plan-level risk-adjusted reinsurance

spending.¹⁷ Much of the change in the divergence between plan bids and plan liability as measured in the claims data is attributable to the significant growth in rebates as a share of total Part D spending over this time period (Figure S2). That is, as rebates in this market have grown, plans have been able to use this rebate revenue to hold beneficiary premiums low. While the fact that plans have consistently made payments into the risk corridor program, on average, suggests that plans may be engaging in broader strategic behavior to enhance profitability, these risk corridor payments have not systematically grown over the study period, suggesting that they are not likely to be a significant contributing factor to the growing divergence between plan bids and claims-based plan liability observed during the study period.

In contrast, adjusting for the growth in rebates does not account for most of growth in the divergence between reinsurance bids and actual reinsurance liability. Instead, plans appear to have been systematically under-bidding their expected reinsurance payments, collecting additional federal subsidies through the reconciliation process. In 2015, this strategic behavior enabled plans to extract excess federal subsidies of approximately 3 percent of total federal Part D spending. These excess federal subsidies attained through reinsurance reconciliation represented another source of revenue that has enabled plans to reduce their bids and thus hold beneficiary premiums low. This systematic under-bidding of reinsurance appears to have begun around 2011, and it is unclear what may have led plans to initiate this behavior (and why they did not do so earlier). It is possible that the growing share of spending in catastrophic coverage—and thus the larger dollars at stake—increased the incentive to under-bid the reinsurance subsidy. Moreover, it may be somewhat of a self-reinforcing market behavior such that once some market competitors begin using this strategy, others are compelled to follow, in an effort to avoid having their premiums be substantially higher than their competitors.

These findings have important implications for considering the potential impact of reforms to the Part D program. While policy makers and analysts have generally recognized the notion that reforms to reduce federal reinsurance liability would help to address the misincentives created by plans' limited liability for high-spending beneficiaries, these results suggest that such reforms could also help reduce excess federal subsidies by limiting the scope for plans to under-bid their expected reinsurance liability—both directly, by decreasing the federal government's share of spending (and thus the share eligible for reconciliation), and indirectly, by increasing plans' incentives to manage spending and therefore reducing the share of overall spending that occurs in catastrophic coverage. Alternatively, if policy makers are unsuccessful at achieving such wholesale reforms to the reinsurance program, they should consider reforming reconciliation payments such that plans only collect 74.5 percent of the amount by which they under-bid reinsurance, rather than the full 100 percent of the difference, which would not generate these excess federal subsidies relative to actual spending and would reduce plans' incentive to engage in this strategic behavior.

However, these findings also underscore the fact that increasing rebate revenue and excess reinsurance reconciliation payments have played an important role in enabling Part D plans to hold beneficiary premiums low. Reforms to the reinsurance program and a movement toward basing beneficiary cost-sharing on net rather than list prices would arguably address important misincentives in the program design today (and provide financial relief for beneficiaries who take highly rebated drugs). Moreover, these reforms could improve competition in this market by reducing plans' opportunities to strategically game the bidding system and by having their premiums better reflect their actual costs.^{5,17} However, such reforms are likely to result in premium increases, which has proven to be politically challenging. Nonetheless, it is important for policy makers and other stakeholders to understand the dynamics and tools that have enabled plans to keep premiums low; that is, the substantial roles that increasing rebate revenue and excess federal subsidies due to reconciliation have played in this dynamic over time. Policy makers concerned about potential premium increases could consider mechanisms such as phasing-in changes to gradually implement such premium increases over time; moreover, some of these premium increases may be offset by reduced net spending due to improved market functioning.

4.1 | Limitations

This study has several important limitations. First, it excludes about half of the Part D market over the study period because plan bids and plan liability can only be accurately estimated and measured for individual, basic, stand-alone PDPs. Additional data on plan bids for MA-PDs, which represent a growing share of the Part D market over time, would be valuable to assess the broader market trends. Additionally, using aggregate Part D rebate data to adjust total spending for rebates has important limitations. Notably, doing so implicitly requires an assumption that the rebate percentage is constant, on average, across all plans. However, alternative options are limited because there is no comprehensive drug-level rebate data available. Nonetheless, additional research exploring the potential heterogeneity across plans is warranted.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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