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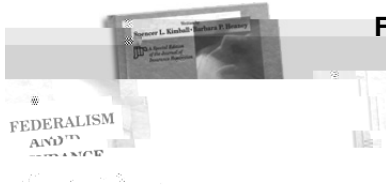
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Prescription Drug Insurance Plans: Potential Cost Reductions and the Pass-Through of Manufacturer Pharmaceutical Rebates to Premiums

Charles C. Yang*

Abstract

In response to the recent moves to reduce prescription drug expenses and eliminate manufacturer pharmaceutical rebates for Medicare and Medicaid, this research investigates the pass-through of manufacturer pharmaceutical rebates to premiums and examines the potential for prescription drug cost reductions through efficiency improvement. The results indicate that eliminating all pharmaceutical rebates but using 50% of the eliminated rebates to lower prescription drug list prices, the premium per member month would increase by \$8.6 for the whole

* Department of Finance, Florida Atlantic University, Boca Raton, cyang1@fau.edu

Introduction

High prescription drug costs are a persistent issue with consumers and policymakers (Bishop, 2018). Inflation-adjusted retail prescription drug spending per capita in the U.S. increased from \$90 in 1960 to \$1,025 in 2017 (Kamal, Cox and McDermott, 2019). Total reimbursement for all brand-name drugs in Medicare Part D increased by 77% from 2011 to 2015 (62% after manufacturer rebates) (HHS, 2018a). One of the top priorities of the Trump Administration is to reduce the price of prescription drugs (HHS, 2018b). In May 2018, the U.S. Department of Health and Human Services (HHS) released the “American Patients First” blueprint, a comprehensive plan to lower drug costs and reduce out-of-pocket (OOP) costs (HHS, 2018b). Furthermore, in January 2019, the HHS issued a proposed rule to eliminate manufacturer rebates to plan sponsors under Medicare Part D, Medicaid managed care organizations (MCOs), or the pharmacy benefit managers (PBMs) under contract with them, in exchange for potential point-of-sale price reductions

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In the literature, data envelopment analysis (DEA) has been utilized to identify efficient and inefficient health plans; and for inefficient plans, the DEA generates efficient target levels of “inputs” and “outputs” required to bring the plan into efficient operation (Brockett, Golden and Yang, 2018; Yang and Wen, 2017). Brockett, Golden and Yang (2018) apply DEA to assess the potential savings of Medicare obtainable through optimally efficient implementation of Medicare accountable care organizations (ACOs) and Medicare Advantage plans. Similarly, Yang and Wen (2017) uses DEA to examine the potential cost reductions for the consumer operated and oriented plans (COPs). Both of these two studies analyze hospital and medical expenses, claim adjustment expenses, and administrative expenses. This current research contributes to the literature by adopting the DEA approach to explore efficient prescr

to chargebacks and lower prices that would reduce beneficiary OOP spending.” Klaisner, Holcomb and Filipek (2019) document a unanimous premium increase under several scenarios after removing manufacturer rebates. Fitzpatrick and Carlson (2018) find that the average Medicare Part D premium would have been 45% and 52% higher in 2017 and 2018 without rebates. Furthermore, the CMS (2018) shows that the extra government costs (\$196 billion for 2020–2029) for Medicare Part D due to premium increases are far more than offsetting the savings of beneficiaries (\$25 billion for 2020–2029) under the proposed rule. In response, this current research aims to provide further evidence on the impact of manufacturer rebates by examining their pass-through to premiums of health insurers and

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prescription drugs from other countries. The HHS and the U.S. Food and Drug Administration (FDA) have developed a federal “Safe Importation Action Plan” proposing two pathways to allow for the importation of drugs from foreign countries (HHS and FDA, 2019). In this research the DEA analysis identifies the efficient

Program and the state-negotiated supplement rebates are collected by the states (MACPAC, 2018). Medicaid MCOs can negotiate their own rebates with

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vector of year fixed effects, α is a vector of state fixed effects, γ is a vector of control variables of insurer characteristics.

Table 1:
Number of insurers in the sample of the business line: comprehensive individual, comprehensive group, comprehensive individual/group, and Medicare Advantage

To address the potential endogeneity concern of pharmaceutical rebates, state-fixed effects are incorporated to account for the factors that vary across the states, and year-fixed effects are included to capture the factors that vary over time (Karaca-Mandic, Abraham and Simon, 2015). This current research controls for a rich set of insurer characteristics including the insurer organization type, group affiliation, the number of states the insurer serves, the size of the insurer, business lines, and product types. Additionally, utilization measures of medical services are incorporated to control for the effect of insureds' risk profiles. Different from Karaca-Mandic, Abraham and Simon (2015), the control variables also include the insurer's various payment methods, such as capitation payments and fee-for-service payments. For robustness checks and sensitivity tests, the regression analysis is also conducted on the sub-samples of insurers that remained in the market all three years of the sample time period; and another regression is conducted, including an additional explanatory variable—percentage of incurred claims paid in prescription drugs.

The description of the independent variables is presented in the Appendix (Yang, 2018). By group affiliation, the insure

variable "single-state insurers" indicates whether the insurer serves only one state or more than one state. Most insurers do not use all the payment methods or operate

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between the actual input value and the efficient input target value is the potential cost reductions (or savings) in the input. The efficiency of health insurers can be evaluated from various perspectives, such as the insurers' perspective, the consumers' perspective and the societal perspective (Yang and Lin, 2017). Different perspectives require different inputs and outputs. One of the major objectives of any health care system (including the federal Affordable Care Act [ACA]) is to provide necessary medical services to the maximum number of beneficiaries with reasonable costs. Therefore, this current research adopts the societal perspective to measure the "medical services efficiency" of the health insurer (Brockett et al., 2004; Yang, 2014; Yang and Lin, 2017; Yang and Wen, 2017; Brockett, Golden and Yang, 2018), which evaluates the insurer's performance in minimizing medical costs given the number of covered persons and medical services received (or maximizing the number of covered persons and medical services received given medical costs). Correspondingly, the outputs are the measures of health coverage and medical services provided; and the inputs are the expenses incurred. Specifically, the outputs include enrollment and the utilization of medical services (e.g., ambulatory encounters and hospital patient days), and the inputs are hospital/medical expenses (excluding prescription drug expenses), prescription drug expenses, and other expenses (e.g., quality improvement, claims adjustment and general administrative expenses). The inputs and outputs of the medical services efficiency model are presented in Table 3.

Table 3:
Inputs and Outputs of DEA Efficiency

Different from the studies of health insu

to analyze prescription drug cost reductions if the rebates are not allowed. Prohibiting rebates would have affected premiums or profit margins of health insurers, but not the “set coverage” of medical services (e.g., ambulatory encounters and hospital patient days). Insurers receive rebates after gross prescription drug expenses are incurred. DEA Model 2 actually compares the efficiency on gross

member year is \$1,003.7 for the comprehensive individual line, \$952.4 for the comprehensive group line, \$946.8 for the whole comprehensive line (individual/group), and \$1,533.3 for Medicare Advantage. Pharmaceutical rebates of Medicare Advantage are the highest, on average \$542.8 per member year, accounting for 35.4% of gross prescription drug expenses.

Table 4:
Summary statistics of hospital/medial expenses (excluding prescription drugs) and net prescription drug expenses

*The dollar amount is in the 2017 Texas dollar.

Table 5:
Summary statistics of gross prescption drugs (before rebates) and pharmaceutical rebates

*The dollar amount is in the 2017 Texas dollar.

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Table 7:
Summary statistics of other expenses (quality improvement, claims
adjustment and general administrative expenses)

*The dollar amount is in the 2017 Texas dollar.

Relative to the total net expenses (hospital/medical expenses, net prescription drug expenses, and other expenses), other expenses account for 13.1% and 13.3% of the total net expenses for the whole comprehensive line and Medicare Advantage. Other expenses account for 14% of the total net expenses for the comprehensive individual line, significantly higher than that of the comprehensive group line (12.4%) (p-value is <0.0001).

Pass-Through of Pharmaceutical Rebates to Premiums

To investigate the impact of pharmaceutical rebates on premiumstic(e,u6t1.1ol)-0 Tw (earch.4())TJ -0708.64 -1.1497 TD

Table 8:
Regression estimates of the effect of pharmaceutical rebates (% of gross prescription drug expenses on earned premiums (per member year)

Variables	Earned premiums (comprehensive individual)	Earned premiums (comprehensive group)	Earned premiums (comprehensive individual/group)	Earned premiums (Medicare Advantage)
Enrollment in the comprehensive individual line		-407.70**	-969.46***	-851.24
Enrollment in the comprehensive group line	1215.53***			-1150.63**
Preferred provider organizations (PPOs)	843.93***	335.08***	300.26**	420.59
Point of service (POS)	-446.84	-523.02***	-751.71***	-936.67
Indemnity only	-484.64	81.87	-167.96	-846.38
Capitation payments	522.61	317.97	154.09	1592.49***
Fee-for-service payments	-613.95**	21.95	-217.25	1334.57***
Bonus/withhold - contractual fee payments	709.17	639.73**	480.69	337.36
Non-continuent salaries	-848.46	1012.75	962.95	4585.36*

Other variables included: year and state dummy variables.
***p<0.01, **p<0.05, *p<0.10.

CMS (2018) examines the impacts of removing pharmaceutical rebates and assumes that 15% of the eliminated rebate would be retained by manufacturers,

claims paid in prescription drugs. Similar results obtained. The premium increases per member year with a one percentage point decrease in pharmaceutical rebates are \$5.8 (individual line), \$29 (group line), \$18.1 (individual/group line) and \$12.9 (Medicare Advantage). For the whole sample, the premium increases are \$7 (individual line), \$24.7 (group line), \$15.8 (individual/group line) and \$12.9 (Medicare Advantage).

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75% of the remaining 85% would be converted into chargebacks, and 25% of the remaining 85% (that is, 21% of the eliminated rebates) would be used to lower list prices of prescription drugs. This current research presents the results of four scenarios: none of the eliminated rebates are used to lower list prices (all are retained by manufacturers and/or applied to chargebacks), 25% of the eliminated rebates are used to lower list prices, 50% of the eliminated rebates are used to lower list prices, and 75% of the eliminated rebates are used to lower list prices.

For the whole comprehensive (individual/group) line, the regression results indicate that the earned premium per member increases by \$15.8 with a one percentage point decrease in pharmaceutical rebates. On average, pharmaceutical rebates account for 13% of gross prescription drug expenses for the whole5% of5vnl0437 TDve6(5ti)1.1(st p)-4.

rebates are used to lower list prices, the premium of the comprehensive group line would increase by \$257.9 per member year, or \$21.5 per member month. If 50% of the eliminated rebates are used to lower list prices, the premium of the comprehensive group line would increase by \$171.9 per member year, or \$14.3 per

Efficiency-Based Potential Cost Reductions

Reducing health expenditures (including prescription drug expenses) is a shared responsibility among all the stakeholders. As the attempts to lower prescription drugs prices by pharmaceutical manufacturers, insurers should also try to reduce prescription drug expenses through efficiency improvement. Using the DEA efficiency models, this section examines the potential cost reductions on prescription drug expenses; hospital/medical expenses; and other expenses,

Table 10:

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Table 11:
Cost reductions of hospital and medical expenses, gross prescription drug expenses (before rebates), and other expenses

Conclusion

High prescription drug costs are a persistent issue with consumers and policymakers. One of the top priorities of the Trump Administration is to reduce the price of prescription drugs. The “American Patients First” blueprint of the HHS introduces a comprehensive plan to lower drug prices and reduce OOP costs. Furthermore, the HHS issued a proposed rule to eliminate manufacturer rebates to plan sponsors under Medicare Part D and Medicaid MCOs. Even t

total premium. The pharmaceutical rebates on the comprehensive individual line are significantly lower than that of the comprehensive group line.

The regression results indicate that premium per member month increases by \$1.3 with a one percentage point increase in pharmaceutical rebates (as a

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Appendix: Description of Independent Variables

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