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## Employment Impact of Proposed Mandatory Part D Drug Rebates

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### Introduction

The President and some members of Congress have proposed requiring that prescription drug manufacturers pay rebates to the federal government for drugs dispensed to Medicaid/Medicare dual-eligible beneficiaries and other low-income seniors through the Medicare Part D program. (The required rebates would be in addition to the manufacturer-paid rebates already in the Part D program due to the market-based negotiations between manufacturers and Part D plans).

The Office of Management and Budget (OMB) estimates that the President's proposal will reduce federal outlays by \$135 billion over 10 years.<sup>1</sup> However, the reduced revenue is likely to substantially affect the pharmaceutical industry, and OMB did not provide any estimates of the effect on jobs – somewhat ironic in that the President's proposal came in the context of his "jobs bill."

In this short paper, we take a step toward filling that analysis gap. In particular, using the historic relationship between revenues and employment, we find that by 2021 the proposal could reduce pharmaceutical and related employment by up to 238,000 jobs.

### Background

Since January 1, 1991, prescription drug manufacturers have been required to enter into agreements with the federal government to pay rebates to the Medicaid program, as a condition of their drugs being covered by Medicaid.<sup>2</sup> Initially, for brand-name drugs the rebates were set to the greater of 12.5 percent of the average manufacturers price (AMP), or the difference between AMP and the "best price" offered to any payer. For generic drugs, the initial rebate was 10 percent of AMP. These minimum rebate percentages were increased over time to 15.1 percent of AMP for brands, and 11 percent for generics. In addition, manufacturers pay an additional rebate to the extent that AMPs increase more than inflation.

The Patient Protection and Affordable Care Act (PPACA)<sup>3</sup> increased the minimum rebate amounts, effective January 1, 2010, to 23.1 percent of AMP for most brand-name drugs, 17.1 percent of AMP for clotting factors

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<sup>1</sup> "Living Within Our Means and Investing in the Future: The President's Plan for Economic Growth and Deficit Reduction," Office of Management and Budget, September 2011, p. 37, at <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2012/assets/jointcommitteereport.pdf>.

<sup>2</sup> Omnibus Budget Reconciliation Act of 1990, P.L. 101-508, Section 4401.

<sup>3</sup> Patient Protection and Affordable Care Act, Pub. L. No. 111-148, 124 Stat. 119 (2010), amended by Health Care and Reconciliation Act of 2010, Pub. L. No. 111-152, 124 Stat. 1029 (2010). These provisions are in Section 2501.

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and pediatric-only drugs, and 13 percent of AMP for generic drugs. In addition, the amount of the total rebate is capped at 100 percent of AMP.<sup>4</sup>

Separately, in 2006 Medicare began to cover prescription drugs under Part D, created by the Medicare Modernization Act (MMA).<sup>5</sup> Part D is available to all Medicare beneficiaries. However those eligible for both Medicare and Medicaid, as well as several million other low-income<sup>6</sup> Medicare beneficiaries not eligible for Medicaid, receive additional “Low-Income Subsidies” (LIS) to pay the Part D premium and all or part of the copayments. Overall, LIS beneficiaries represent about 40 percent of the Part D enrollees, and 56 percent of the Part D drug expenditures.<sup>7</sup>

Part D plans (and Medicare Advantage plans that include prescription drug coverage) are run by private companies, and therefore do not receive statutory Medicaid drug rebates for their enrollees who are eligible for Medicaid. However, Part D plans negotiate with drug manufacturers for, and receive, rebates that apply to prescriptions filled by all their enrollees, not just those who are eligible for Medicaid or LIS. Any given Part D plan may not receive rebates for all drugs from all manufacturers. Indeed, part of the reason Part D works is that drug makers compete for preferential access to Part D enrollees. For example, a Part D plan might negotiate with a drug maker to offer placement on a preferred formulary tier, and thus a lower copay to its members, for a particular drug, in exchange for a larger rebate (that is, a lower price to the Part D plan). This competition can be very effective – and it is part of the reason that, almost unique among government health programs, Part D spending is running substantially less than initially projected. According to the latest Medicare Trustees Report, Part D spending in 2010 was \$62.0 billion,<sup>8</sup> or 46.4 percent below the 2005 forecast for 2010, which was \$115.7 billion.<sup>9</sup>

Estimates of the rebates received by Part D plans vary. The Congressional Budget Office estimated that total rebates in 2008 represented about 14 percent of total spending on brand-name drugs.<sup>10</sup> This measure likely understates average negotiated rebate amounts for two reasons. First, it measures total spending on brand drugs, including pharmacy and other distribution costs; rebates measured against the manufacturer’s sale price would be higher. Second, some percentage of spending is for brand-name drugs through Part D plans that do not have a rebate for that particular drug. The Medicare Trustees state that “Many brand-name prescription drugs carry substantial rebates, often as much as 20-30 percent” in 2009.<sup>11</sup> Notably, this is higher

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<sup>4</sup> For details, see Cindy Mann, Letter to State Medicaid Directors, “Re: Medicaid Prescription Drug Rebates,” April 22, 2010, at <http://www.cms.gov/smdl/downloads/SMD10006.pdf>.

<sup>5</sup> Medicare Prescription Drug, Improvement, and Modernization Act, P.L. 108-173.

<sup>6</sup> For purposes of Part D, “low income” means family income below 150% of the federal poverty level (FPL).

<sup>7</sup> Congressional Budget Office, “Reducing the Deficit: Spending and Revenue Options,” Pub. No. 4212, March 2011, p. 54, at <http://www.cbo.gov/ftpdocs/120xx/doc12085/03-10-ReducingTheDeficit.pdf>.

<sup>8</sup> Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Fund, “2011 Annual Report,” p. 133, at <http://www.cms.gov/reportstrustfunds/downloads/tr2011.pdf>.

<sup>9</sup> Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Fund, “2005 Annual Report,” p. 105, at <http://www.cms.gov/reportstrustfunds/downloads/tr2005.pdf>.

<sup>10</sup> Congressional Budget Office, “Reducing the Deficit: Spending and Revenue Options,” Pub. No. 4212, March 2011, p. 54, at <http://www.cbo.gov/ftpdocs/120xx/doc12085/03-10-ReducingTheDeficit.pdf>.

<sup>11</sup> Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Fund, “2011 Annual Report,” p.183, at <http://www.cms.gov/reportstrustfunds/downloads/tr2011.pdf>.

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than the pre-PPACA minimum Medicaid rebate. CBO also reports Part D plans have “secured rebates somewhat larger than the average rebates observed in commercial health plans.”<sup>12</sup>

For those patients whose drug coverage transitioned from Medicaid to Medicare Part D, there could have been a reduction in the rebate paid; that is, drug makers might receive a higher net price for drugs for those patients than they would have had if those patients' drug coverage had stayed under the purview of Medicaid. However, Part D cannot be evaluated properly by looking at a single subpopulation; this is the quintessential apples to oranges comparison leading to faulty conclusions. It operates as a program covering an entire population, with the whole far more than the sum of the parts. Importantly, manufacturers also extended negotiated rebates to a far larger population as a result of the creation of Medicare Part D. About 11 million Medicare beneficiaries went from having no prescription drug insurance to being covered through Part D. Before Part D, rebates were negotiated for few, if any of these individuals. Today, Part D plans negotiate rebates on behalf of all of them. Researchers report the price reduction for this population at nearly one-quarter.<sup>13</sup> In addition to rebates starting in 2011 manufacturers are also required, by law, to provide a 50 percent discount on drugs used by beneficiaries in the “coverage gap.” Analysts report that this will amount to more than \$30 billion paid by manufacturers over ten years<sup>14</sup>—another factor that makes comparisons of Medicaid and Medicare prices both simplistic and skewed.

## Proposed Changes

Recently, the Administration has proposed requiring brand and generic drug makers to pay to the federal government the same percentage rebates they pay in the Medicaid program (with these rebates added to those already paid to Part D plans), for Medicare Part D enrollees who are eligible for Medicaid and for those LIS beneficiaries not eligible for Medicaid. Approximately 40 percent of the Medicare beneficiaries whose drugs would now qualify for the Medicaid-level rebate paid to the federal government are, by definition, not eligible for Medicaid. OMB projects that the President’s policy will result in an additional \$135 billion in additional rebates to the federal government over 10 years.<sup>15</sup> Legislation with a similar proposal has also been introduced in Congress.<sup>16</sup>

Earlier this year, the Congressional Budget Office (CBO) described and scored a similar proposal as increasing rebates by \$112 billion over 10 years.<sup>17</sup> Unlike the Administration proposal, the proposal scored by CBO required new mandatory rebates for brand prescription drugs, but not generic drugs.

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<sup>12</sup> See March 12, 2007 CBO letter to the Honorable Joe Barton and the Honorable Jim McCrery, page 3.

<sup>13</sup> See “The Effect of Medicare Part D on Pharmaceutical Prices and Utilization,” Mark Duggan and Fiona Scott Morton, NBER Working Paper No. 13917, April 2008, page 6.

<sup>14</sup> Pricewaterhouse Coopers Health Research Institute Health Reform: Prospering in a Post Reform World. April 2010.

<sup>15</sup> “Living Within Our Means and Investing in the Future: The President’s Plan for Economic Growth and Deficit Reduction,” Office of Management and Budget, September 2011, p. 37, at

<http://www.whitehouse.gov/sites/default/files/omb/budget/fy2012/assets/jointcommitteereport.pdf>.

<sup>16</sup> Rep. Waxman, et. al., “Medicare Drug Savings Act of 2011,” H.R. 2190, introduced June 15, 2011.

<sup>17</sup> Congressional Budget Office, “Reducing the Deficit: Spending and Revenue Options,” Pub. No. 4212, March 2011, p. 54, at <http://www.cbo.gov/ftpdocs/120xx/doc12085/03-10-ReducingTheDeficit.pdf>.

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## Effect on Pharmaceutical Industry Employment

At a minimum, these additional rebates would constitute a direct, dollar-for-dollar reduction in revenue to the pharmaceutical industry. In a less-than-best case, the rebates would make at least some drugs money-losers; these drugs would be withdrawn from the market and the revenue reduction would be even larger than the new payments to the federal government.

In either case, the revenue reduction would be absorbed by the pharmaceutical industry in three forms – reduced payroll employment, reduced profits, and (depending on market conditions) possibly higher prices for other buyers. The reduction in revenue could also result in reduced investment in research and development, slowing the process of bringing new drugs to market and imposing further costs on both patients in need of new treatments and on the industry. Here, though, we focus only on the reduced employment – both direct employment in pharmaceutical companies, and “indirect” employment in companies that supply goods and services to the pharmaceutical industry. We base our analysis on the OMB estimate that the policy would extract \$135 billion in additional rebates from pharmaceutical companies. In this analysis, we do not take into account possible effects “downstream” from the drug companies themselves – that is, effects on distributors, pharmacies, and the like.

## Methodology and Results

To project the reduction in pharmaceutical employment, we first estimated the relationship between revenue and employment in the industry. We obtained data on U.S. revenue and employment in the brand name pharmaceutical industry for the years 2002 through 2010 from IBISWorld.<sup>18</sup> Revenue figures for past years were adjusted for inflation based on the Bureau of Labor Statistics' (BLS) employment cost index for total compensation. We ran an ordinary least-squares regression of first differences (“changes”) in employment on first differences (“changes”) in revenue (in millions of constant dollars). The result was a coefficient of 2.91, which was quite statistically significant (with a *t*-statistic of 5.42). This coefficient implies an average of 2.91 direct pharmaceutical industry jobs lost in each year for each \$1 million reduction in industry revenue that year.<sup>19</sup> The effect is cumulative from year to year.

The CBO projects that the Part D rebate proposal will result in an annual industry revenue reduction of \$18.0 billion by 2021,<sup>20</sup> which would correspond to a reduction of 52,000 jobs by that date. The Administration's proposal would result in an annual reduction in revenue of \$21.7 billion by 2021,<sup>21</sup> which would correspond to

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<sup>18</sup> Sophia Snyder, “Brand Name Pharmaceutical Manufacturing in the U.S.,” *IBISWorld Industry Report* 32541a, August 2011.

<sup>19</sup> OMB’s estimate includes a small percentage of lost revenue from the generic pharmaceutical industry which may have a slightly different coefficient. This could lead to a slightly higher or lower jobs estimate depending on the total generic pharmaceutical revenues included in OMB’s estimate.

<sup>20</sup> Congressional Budget Office, “Reducing the Deficit: Spending and Revenue Options,” Pub. No. 4212, March 2011, at <http://www.cbo.gov/ftpdocs/120xx/doc12085/03-10-ReducingTheDeficit.pdf>.

<sup>21</sup> The CBO published both year-by-year projections for annual changes in revenue, and a 10-year total. The OMB published a projection of the 10-year total change in revenue, but not year-by-year totals. Since the proposed rebate formula will not change from year to year in either proposal, we have assumed that the proportional difference between the 10-year totals also holds for

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a reduction of 63,000 jobs. These figure include only those who would be directly employed by pharmaceutical companies

However, pharmaceutical industry revenue also finances industry suppliers (of both goods and services), and therefore employment in those companies as well. Based on separate study, by Battelle,<sup>22</sup> a revenue loss in the pharmaceutical industry will cause a reduction in employment of an average of 2.78 jobs in these “upstream” companies for each job lost in the pharmaceutical industry itself. Taking into account both the direct impact on employment in pharmaceutical companies, and the indirect impact on employment in upstream suppliers to the pharmaceutical industry, the total impact by 2021 would be a loss of approximately 198,000 jobs under the CBO proposal, and 238,000 jobs under the Administration's proposal.<sup>23</sup> The annual projections are shown in Table 1.

**Table 1: Effect of Proposed Rebates on Part D Drugs for LIS Beneficiaries**

Year	Projected change in revenues (\$million)		Predicted change in employment (cumulative, relative to baseline)			
			Pharmaceutical industry direct employment		Pharmaceutical-related employment, incl. indirect jobs	
	CBO	OMB	CBO	OMB	CBO	OMB
2013	-4,000	-4,800	-11,600	-14,000	-43,900	-53,000
2014	-10,000	-12,100	-29,100	-35,000	-109,800	-132,500
2015	-12,000	-14,500	-34,900	-42,000	-131,800	-159,000
2016	-12,000	-14,500	-34,900	-42,000	-131,800	-159,000
2017	-13,000	-15,700	-37,800	-45,500	-142,800	-172,200
2018	-14,000	-16,900	-40,700	-49,000	-153,800	-185,400
2019	-14,000	-16,900	-40,700	-49,000	-153,800	-185,400
2020	-15,000	-18,100	-43,600	-52,500	-164,800	-198,600
2021	-18,000	-21,700	-52,300	-63,000	-197,800	-238,300

**Sources:**

<b>CBO Proposal:</b>	“Option 25” in “Reducing the Deficit: Spending and Revenue Options,” CBO Pub. No. 4212, March 2011, p. 54. Figure for 2012 was reported as negligible relative to the precision for the projections, so the 10-year total is the same as for years 2013-2021
<b>OMB Proposal:</b>	“Living Within Our Means and Investing in the Future: The President's Plan for Economic Growth and Deficit Reduction,” Office of Management and Budget, September 2011, p. 37; Annual figures from author's calculations based on ratio of 10-year totals.
<b>Employment:</b>	Author's calculations, as described in the text.

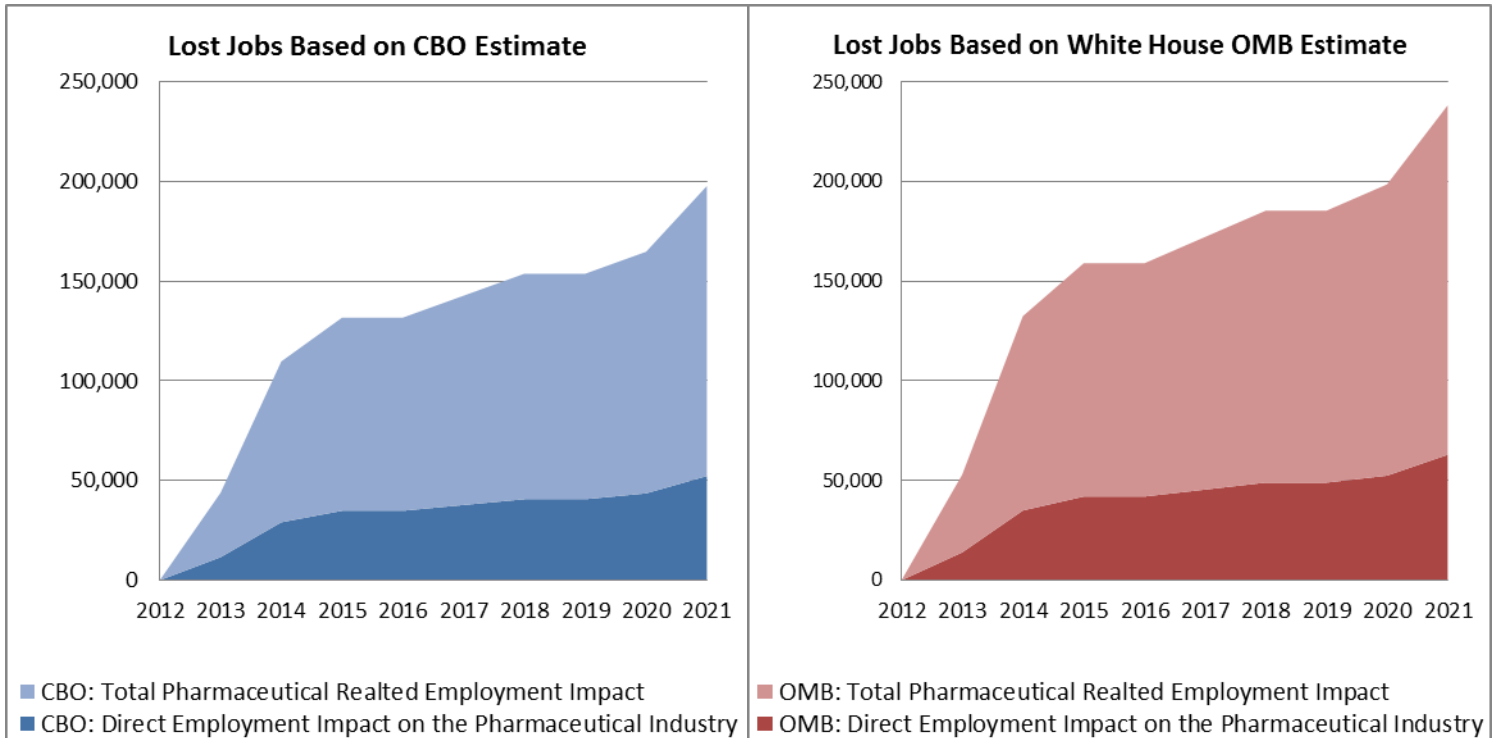
each individual year. Therefore, we multiplied the annual CBO figures by the proportional difference in the totals to obtain annual estimates for the OMB proposal.

<sup>22</sup> Battelle Technology Partnership Practice, “Summary of Impacts on the Nation and Key States of a \$20 Billion Economic Event on the Biopharmaceuticals Industry,” July 2011, at <http://www.phrma.org/sites/default/files/84/battelle-phrmabiopharmaceuticalsimpacts-usandstatesummary.pdf>.

<sup>23</sup> This figure does not include the “stimulus” effect of spending by those holding such jobs; if the rebate savings were used for some other purposes then this effect would be canceled out by changes elsewhere in the economy.

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Figure 1: Pharmaceutical Jobs Lost Due to Part D Rebate Proposals



## Potential Additional Effects

The foregoing analysis implicitly assumes that the rebates paid to the government represent the entire effect of this proposal on pharmaceutical industry revenue. This is indeed the primary effect, but there are other possible effects as well. These secondary effects could potentially mitigate part of the employment loss estimated here, but not without harming patients or slowing future innovation.

The first effect is the reduced competitive pressure to lower prices, which is a direct result of mandatory rebates for one segment of the market. To understand how this works, note first that from the point of view of the drug maker, the purpose of offering rebates (that is, lower prices) is to increase unit sales in such a way that total revenue (minus the additional cost of producing those extra units) is higher with the lower price than it would be without the rebate. As it stands, a Part D plan can offer to put a drug on its formulary (a “preferred drug” list with lower copays) in exchange for a rebate from the manufacturer. The result is that when patients and their doctors choose between multiple drugs that can be used to treat the same condition or illness, they will try one of the preferred drugs on the formulary first, and most will stick with it. In a sense, the Part D plan is saying to the manufacturer, “Give us a rebate, and you will get preferential access to all our enrollees.”

However, government policy mandating rebates by law for the Medicaid/LIS patients – who represent 40 percent of the enrollees and 56 percent of the drug spending – will reduce the incentive now present in Part D to compete for sales both to this population and in Medicare Part D overall. The reduced incentive to offer

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rebates will most likely result in smaller rebates on fewer drugs to fewer Part D plans. This will translate into higher premiums for patients, and therefore higher amounts for the government portion of the premiums as well. This will mitigate the job loss effect of mandatory rebates – but it will also mitigate the budgetary benefits and will cause financial harm to beneficiaries. Higher premiums also could conceivably lead to lower enrollment in this voluntary program, with the healthiest beneficiaries most likely to forego coverage; if so, premiums would further increase for remaining beneficiaries, and the government could face higher expenditures on other health services paid for by Medicare as beneficiaries' access to medicines declines.

Another potential impact is more subtle and has mainly long-term consequences. Note that the deficit reduction for the government (or equivalently, revenue reduction for the drug makers) is accomplished through a reduction in unit prices at the same level of unit sales. This requires that the reduction in employment not come at the expense of employment related to the production or distribution functions of the industry. Therefore, the reduction in employment is likely to be disproportionately in the research and development function. A reduced level of research will reduce the pace of new drug development, and potentially lead some valuable candidate medicines to go undeveloped, because government mandated rebates will ramp up the already very high level of risk involved in research and development investments. This could have substantial long-term consequences for medical progress and future improvements in health.

Paradoxically, a slowdown in the development of new drugs would further reduce drug spending, as patents expire faster than new drugs are developed and introduced. While this may improve the apparent condition of the federal budget and allow the private sector to spend less on health care and more on other forms of consumption, the budgetary improvement would come at the direct expense of improved health, as resources are diverted from biomedical research to other pursuits.

## **Conclusion**

Requiring that prescription drug manufacturers pay rebates to the federal government (in addition to those already negotiated in the competitive Part D program) for drugs dispensed to Medicaid- and LIS-eligible Medicare beneficiaries through the Medicare Part D program will increase government revenue at the direct expense of pharmaceutical industry revenue. If the Office of Management and Budget's estimates of the revenue transfer are correct, there will be a substantial negative impact on employment in the pharmaceutical industry and other related jobs. Based on historical data, an industry revenue reduction of the size estimated by OMB is likely to result in the loss of over 230,000 pharmaceutical-related jobs.

The impact of the proposed changes could also take the form of higher prices for privately insured patients, higher government and enrollee Part D payments for the non-LIS population, and a slowdown in the development of new drugs due to a reduction in the pharmaceutical R&D workforce.