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Issue Brief

# **Growing Pain: The Expense of Drugs for the Elderly**

**By Dean Baker and John Schmitt<sup>1</sup>**

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CENTER FOR ECONOMIC AND POLICY RESEARCH • 1621 CONNECTICUT AVE., NW, SUITE 500  
WASHINGTON, D.C. 20009 • (202) 293-5380 • <WWW.CEPR.NET> • EMAIL:  
FDR@FDR.NET

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<sup>1</sup> Dean Baker is co-Director and John Schmitt is Senior Research Associate at the Center for Economic and Policy Research.

## Executive Summary

Prescription drug costs are placing a large and growing burden on the elderly population. The Congressional Budget Office (CBO) estimates that drug costs have risen at a 19.1% annual rate over the last eight years and projects that they will rise at a 10.1% rate annually over the next decade. This paper assesses the extent of this burden by constructing projections for the increase in drug costs over the decade by income quintile of the elderly. The paper then examines the costs of government drug programs of varying degrees of generosity, assuming that the projections of growth in drug expenditures are not affected. Finally, the paper examines options that would contain the cost of drug growth.

The projections show that:

- In the absence of a government drug program, CBO's projections of drug costs imply that rising drug prices will absorb a large share of the income of the elderly. For the lowest income quintile, the projected increase in drug expenditures, measured as a share of after-tax income, will be 24.9 percentage points between 2000 and 2013. For the second lowest income quintile, the projected increase in drug expenses will be 17.9 percentage points of income. For the middle quintile, the increase is projected to be 11.6 percentage points, and even the top quintile would see expenditures increase by an amount equal to 5.4% of their after-tax income.
- Any government program that attempts to alleviate this burden without slowing the growth in drug prices will be expensive. A program that held the share of drug expenditures at their 2000 level for all elderly households would cost 0.75% of GDP per year by 2013. This amount is considerably more than the estimated cost of President Bush's recent tax cut proposal, which is estimated at 0.44% of GDP over the next decade. A plan that just protected the bottom three quintiles – leaving out many middle class households – is projected to cost 0.38% of GDP by 2013. In short, if drug expenditures actually follow the path projected by CBO, then any effort to protect the bulk of the elderly from this expense will be costly to the government.
- Drug prices are far higher in the United States than in any other developed country. This is because the United States is the only country that grants pharmaceutical companies a monopoly in the market, based on patent protection, without any corresponding restriction on prices charged by the industry. The government could follow the example of other nations and either directly impose price controls or set prices through bulk purchasing arrangements. One problem with this approach is that the government is implicitly directing research spending through the profit margins it sets for particular drugs. While there is nothing inherently wrong with the government setting research priorities, if the government does set these priorities, it should do so explicitly, rather than haphazardly through individual pricing decisions.
- An alternative to both rising costs and to price controls would be for the government to assume responsibility for financing the half of drug research that is currently supported

through the patent system. The additional funding would be made available through expanded funding for bio-medical research at universities, foundations, and the National Institutes of Health, and other government agencies. Additional money could also be used to finance research carried through under contract by existing pharmaceutical companies. However, the research financed in this manner would be immediately placed in the public domain. Any pharmaceutical company would be free to use the findings to produce drugs and compete in the market in the same way as generic producers do at present.

- As Baker and Chatani (2002) have argued, such a system would eliminate many of the distortions created by the patent system, such as research money wasted in developing copycat drugs, large marketing expenses, and secrecy – even falsification – of research findings. Projections from Baker and Chatani indicate that increasing government financial support for research, with the findings placed in the public domain, could save the public as a whole (not just the elderly), more than \$200 billion a year in by 2013, even after subtracting the cost of the additional public research.

## **Growing Pain: The Expense Of Drugs for the Elderly**

Expenditures on prescription drugs have been rising at double-digit rates for more than a decade. This rate of increase had not originally posed much of a problem for most of the population because drugs were a small item in total consumer expenditures. However, after the sustained rapid pace of growth, drug expenditures have now become a significant share of household spending. This is especially true for the elderly, who have the greatest need for drugs and are the segment of the population least likely to have employer-paid insurance coverage for prescription drugs.

This paper examines the projected path of prescription drugs spending for the elderly over the next ten years. It also discusses the potential impact of a Medicare prescription-drug benefit, as well as alternative solutions to the problem of rising drug costs.

### **The Path of Prescription-Drug Spending by the Elderly**

CBO estimates that the elderly currently spend about \$100 billion per year on prescription drugs not covered under the traditional Medicare program.<sup>2</sup> According to CBO projections, spending on prescription drugs by the elderly will rise at an annual rate of 10.1% over the next decade, leaving total prescription-drug spending by the elderly at \$278 billion, or more than 1.6% of GDP in 2013.

A portion of this spending on prescription drugs by the elderly is currently covered by the government. Medicare HMOs account for about 6.0% of drug expenditures by the elderly.<sup>3</sup> Medicaid, state-based programs, and the Veterans Administration together cover another 21.0% of drug expenditures. This leaves more than 70% of drug expenditures to be covered by the elderly themselves, either directly out-of-pocket or indirectly through private insurance.

At present, 26% of drug expenditures by the elderly are paid by employer-sponsored insurance, in most cases through plans that maintain insurance for retirees. This source of support for drug payments is likely to dwindle in the near future as employers cut back on the generosity of benefits for retirees.<sup>4</sup> Also, in many industries, retiree health-care benefits were coupled with defined-benefit pension packages. With coverage by defined-benefit plans slipping rapidly, it is likely that coverage by retiree health-insurance plans will fall at a similar pace. This means that through 2013, the period of interest here, a rising percentage of prescription-drug costs will be paid directly by the elderly in their retirement years, rather than being covered under an insurance benefit earned during their working lifetime.

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<sup>2</sup> See CBO 2002, Table 3.

<sup>3</sup> See CBO 2002, Figure 4.

<sup>4</sup> The trend toward falling coverage among retirees and the diminishing generosity of benefits was documented as early as 1997. See Hewitt Associates, Kaiser Medicare Policy Project, *Retiree Health Trends and Implications of Possible Medicare Reforms* (Washington, D.C.: Hewitt Associates, September 1997), available at [www.kff.org/content/archive/1318/retiree\\_r.html](http://www.kff.org/content/archive/1318/retiree_r.html).

Table 1 shows our forecasts, based on CBO projections and our own analysis of data from the annual Consumer Expenditure Survey for 2000, of average annual prescription drug spending by the Medicare population by income quintile for the years 2000 to 2013. The dollar estimates in the table refer to the sum of direct spending on prescription drugs and indirect spending on those drugs paid for by private insurance purchased by the household. The table excludes expenditures paid for by the government or employer-sponsored insurance.<sup>5</sup> (For a complete description of how Tables 1 and 2 were constructed, see the appendix .)

**Table 1**  
**Average Annual Spending by Elderly Households on Prescription-Drugs by Income Quintiles**

	Bottom	Second	Middle	Fourth	Top
2000	\$632	\$822	\$1,042	\$1,144	\$1,208
2003	1,137	1,477	1,873	2,057	2,172
2004	1,276	1,659	2,102	2,309	2,438
2005	1,432	1,861	2,359	2,591	2,736
2006	1,606	2,088	2,646	2,906	3,069
2007	1,801	2,341	2,968	3,259	3,442
2008	2,019	2,625	3,327	3,654	3,858
2009	2,263	2,941	3,728	4,094	4,324
2010	2,535	3,295	4,177	4,587	4,844
2011	2,839	3,691	4,678	5,137	5,426
2012	3,179	4,132	5,238	5,752	6,075
2013	3,558	4,625	5,863	6,439	6,800

Source: CBO, CEX and authors' calculations, see appendix.

As can be seen, all income quintiles were spending a substantial sum of money on prescription drugs even in 2000. The fifth quintile spends nearly twice as much as the first quintile. This partly reflects that many elderly households in the bottom quintile are eligible for Medicaid or other government programs, but also that wealthier households are probably receiving somewhat more treatment on average. Total spending is projected to more than quintuple over this period. In just the years from 2000 to 2003, spending per household is projected to have increased by more than 80%. The figures in table 1 actually imply a slower rate of growth in spending on prescription drugs in the future than in the recent past. CBO estimates that combined private and public spending by the elderly on prescription drugs, on a per capita basis, rose from \$600 in 1995 to \$2,400 in 2003, a 19.2% annual rate of increase.<sup>6</sup>

<sup>5</sup> We exclude expenditures from employer-provided insurance because the purpose of this calculation is to assess the cost of drugs as a share of household income. The value of employer-provided insurance to retirees is not included in the measure of after-tax income.

<sup>6</sup> The 1995 figure appears in CBO, 2000, Table 1.

The projected rates of increase in spending will impose a substantial burden on elderly households at all income levels, which is apparent when these increases are expressed as a share of projected after-tax income. Table 2 shows prescription drug spending by income quintile as a percentage of after-tax income.

**Table 2**  
**Shares of Elderly After-Tax Income Used for Prescription Drugs, by Quintile**

	Bottom	Second	Middle	Fourth	Top
2000	9.4%	7.0%	6.1%	4.6%	2.1%
2003	15.2	11.3	9.9	7.4	3.4
2004	16.4	12.3	10.7	8.0	3.7
2005	17.8	13.3	11.6	8.7	4.0
2006	19.3	14.4	12.6	9.4	4.3
2007	20.8	15.6	13.6	10.1	4.7
2008	22.6	16.8	14.7	11.0	5.1
2009	24.4	18.2	15.9	11.9	5.5
2010	26.4	19.7	17.2	12.8	5.9
2011	28.5	21.3	18.6	13.9	6.4
2012	30.8	23.0	20.1	15.0	6.9
2013	33.3	24.9	21.7	16.2	7.5

Source: CBO, CEX and authors' calculations, see appendix.

Measured as a share of after-tax income, the projected increases in prescription-drug spending are large. In the case of the bottom income quintile, the projected increase in spending between 2000 and 2013 is equal to 23.9% of after-tax income. Even if we start the analysis from 2003, the increase in spending by 2013 would be equal to 18.1% of after-tax income. The projected increase in the share of income going for prescription drugs spending is less for higher income elderly, but still large relative to their after-tax income. In the case of the middle-quintile elderly, for example, the projected increase in spending from 2000 to 2013 is equal to 15.6% of after-tax income; from 2003 to 2013 alone, the increase is equal to 11.8% of after-tax income. Even the wealthiest quintile will see an increase in spending equal to 5.4% of after-tax income over this thirteen-year period. These increases will leave the elderly devoting a large share of their after-tax income to prescription drugs. By 2013, prescription-drug costs paid directly out-of-pocket and indirectly through private-insurance plans would account for about 33.3% of *all after-tax income* by the poorest fifth of elderly households; 24.9% of after-tax income for the next poorest fifth; 21.7% for the middle fifth; and 16.2% by the next fifth.

## The Cost of a Prescription Drug Program

The potential impact of rising prescription-drug costs on the living standards of the elderly provide the rationale for a prescription-drug benefit to help defray some of these costs. A major problem with any reasonable prescription-drug plan, however, is that it is likely to be quite costly. Since 2000, both Democrats and Republicans have made a series of proposals for prescription-drug benefits. While the cost of these particular proposals varies greatly depending on their structure and generosity, if we assume that programs don't affect the rate of increase in drug prices, a relatively simple exercise yields a reasonable range for the potential costs of a new prescription-drug program.

Table 3 considers the cost in the year 2013, both in 2013 dollars and as a percentage of GDP in 2013, of a set of plans offering varying degrees of coverage and generosity. The coverage of the plan decreases from the first column, which assumes coverage for all seniors regardless of income, through the last column, which assumes coverage for only the poorest fifth of elderly households. The generosity of the plan (in the rows of the table) is set at two levels. The plan would keep prescription drug-expenditures as a share of after-tax income at either their 2000 (more generous) or their 2003 (less generous) level. The most expensive plan (\$134.2 billion or 0.75% of GDP) would cover all the elderly (column one) and maintain their total prescription-drug expenditures at their 2000 (row one) level relative to after-tax income. The least expensive plan (\$11.9 billion or 0.07% of GDP) would cover only the poorest fifth of seniors (last column) at the 2003 share of income (last row).

**Table 3**  
**The Annual Cost of a Prescription-Drug Plan for the Elderly in 2013**

<b>Base Year</b>	Protect all quintiles	Protect bottom 4 quintiles	Protect bottom 3 quintiles	Protect bottom 2 quintiles	Protect bottom quintile
	Billions of 2013 dollars				
<b>2000</b>	134.2	100.3	68.1	38.9	15.8
<b>2003</b>	101.7	76.0	51.6	29.4	11.9
	Percent of 2013 GDP				
<b>2000</b>	0.75	0.56	0.38	0.22	0.09
<b>2003</b>	0.57	0.42	0.29	0.16	0.07

Source: Authors' calculations, see appendix.

The table demonstrates that any serious drug benefit will be expensive. The most expensive plan in the table, \$134.2 billion or 0.75% of GDP, for example, is substantially larger than President Bush's recent tax-cut proposal, which is projected to cost approximately 0.43% of

GDP over the next decade.<sup>7</sup> Even this plan is not overly generous, since it would still have seniors paying as large a share of their income on prescription drugs in 2013 as they did in 2000 –a year when the political pressure resulting from high drug costs was sufficiently strong that the incumbent president and both major party presidential candidates proposed prescription-drug benefits.

Even a substantially less generous benefit, for example, one that holds the spending of the bottom three quintiles at their 2000 levels, is still expensive in the context of the larger federal budget. Such a plan, which does nothing to offset the drug spending of the middle-income families in the fourth quintile (average income \$25,000 in 2000), would still cost just under 0.4% of GDP.<sup>8</sup>

It is possible to whittle back the number of beneficiaries and the size of the benefits so that the costs become more manageable, but then most seniors face the substantial increases in drug spending described in the prior section. In short, given the CBO projections for drug spending, either a large segment of the elderly will face crushing expenses from prescription drugs, or the government will be faced with an expensive new entitlement program.<sup>9</sup>

### **Containing Drug Costs – An Alternative Route?**

The previous sections show that the projected increases in drug expenditures by the elderly will pose a substantial problem over the next decade, regardless of whether the elderly themselves shoulder these costs or the federal government picks up most or all of the tab through a senior prescription-drug benefit. The high costs of either route raise the obvious question of whether it is possible to reduce the size of the projected burden by containing the cost of prescription drugs.

Consumers in the United States currently pay far more for prescription drugs than do consumers in any other advanced economy. According to a recent analysis by the Australian Productivity Commission (2001), for example, drug prices were far higher in the United States than they were in all other OECD countries, with US consumers often paying more than twice as much for drugs than did consumers in other nations.

The main explanation for the higher US prices is fairly straightforward. The United States is the only nation that guarantees drug companies long monopolies through patent protection, and then does nothing to restrict the price of the drug. Every other industrialized nation has some form of price controls that limit the ability of drug companies to exploit their monopoly position. Only in the United States can firms rely on the government to enforce their monopoly position in the market, while firms maintain unrestricted power to set prices in order to maximize profits.

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<sup>7</sup> The tax cut is projected to cost \$675 billion over the years from 2003 to 2013. GDP is projected to be approximately \$156.8 trillion over this period.

<sup>8</sup> Even these estimates understate the cost of rising drug prices to the government, since they ignore the increased drug costs in the portion of senior drug spending (Medicaid, Medicare in-patient, Medicare HMOs, and Veterans Administration) that is already covered by the federal government. The projections also assume that states continue to assume the same share of the overall burden – a situation that may prove impossible as cash-strapped states face sharply rising drug costs.

<sup>9</sup> Of course, another possibility is that the elderly, particularly poor and middle-income elderly will simply choose to go without prescribed medication.

One obvious answer to the problem of rising drug costs, then, would be to follow the lead of the rest of the developed world and place price controls on prescription drugs. Price controls could either take the form of prices that are explicitly set by some governmental body or prices that are set through a process of negotiation between a bulk buyer and individual pharmaceutical company. From an economic standpoint, these two mechanisms would produce largely the same result, although there may be political reasons why one route would appear more desirable than the other.

While price controls could bring drug prices down to affordable levels, they do raise important issues that have not been seriously addressed. Most of the price reduction would come at the expense of profits and marketing costs, both of which are substantial components of drug prices. However, whatever entity sets the price – either a price control board or a bulk-buying agent – would also effectively be setting the drug companies research agenda through the financial incentives implicit in the controlled (or bargained) prices. The categories of drugs for which the government allowed the greatest mark-up over marginal costs would be the ones where the industry would have the greatest incentive to carry through further research.

This is important to recognize, since it means that once the price is set by a governmental body, the direction of research is also being determined by this body. There is nothing necessarily wrong with this situation –the pharmaceutical industry’s research decisions are already affected by the industry’s own assessment of whether it will be able to get the government or private insurers to pay for specific drugs– but this reality does mean that the pricing agency must consciously set prices with the understanding that it is determining the course of drug research. The failure to set prices with this consideration in mind will lead to the wrong incentive structure for future research.

Also, if the government is guiding research through its pricing mechanism, then it is not clear that the current patent system is the most efficient way to finance drug development. Already, close to half of all biomedical research is not dependent on the patent system, being supported either by the National Institutes of Health or other government agencies or foundations, universities, and private charities. The patent system is inherently wasteful, since it promotes secrecy and duplicative research efforts. According to the Food and Drug Administration (FDA), more than 70% of the new drugs approved in the last decade do not constitute qualitative improvements over existing treatments (U.S. FDA, 2001). Patents can also provide substantial incentives for falsifying research findings, or at least withholding the disclosure of findings that reflect negatively on a firm’s drugs. The patent process itself, and the potential it creates for legal disputes, also adds additional costs that are passed on to consumers.<sup>10</sup>

For these reasons, and others, it is likely to be more efficient to simply finance all drug research directly, through some combination of expanded government support and increased incentives for research by the non-profit sector. The products of this research could be placed immediately in the public domain. Then all firms could compete to produce newly developed drugs at the lowest price – without the government stepping in to impose either a patent monopoly

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<sup>10</sup> See Baker and Chatani (2002) for a fuller discussion of these issues.

or price controls. In effect, all drugs could be produced and sold in the same way as generic drugs at present.

Baker and Chatani (2002) have produced a set of projections of the potential savings under such an alternative mechanism for financing drug research. Their projections show that the annual savings from such a system could easily exceed \$200 billion by 2013 (see their Tables 10B and 11). The fact that there is a large and growing gap between the price for which new drugs are sold and their actual cost of production virtually guarantees that there will be large gains associated with a system of direct financing of drug research.

Perhaps the most basic result in economic theory is that efficiency is maximized when the price is equal to the marginal cost of production. The distortions that have resulted from the gap between price and marginal cost in prescription drugs – massive marketing efforts, falsified or misleading research results, and wasteful copycat research – have been well documented (e.g. Public Citizen, 2001; Bodenhiemer, 2000; Ernst & Young LLP, 2001). Given this evident inefficiency, good economics dictates that policymakers should explore mechanisms that bring price and marginal cost into line in the pharmaceutical industry by undertaking efforts to introduce normal competition into an industry long characterized by government protection.

### **Conclusion**

In this paper, we have examined the implications of the CBO's projections for prescription drug spending by the elderly. CBO's projections imply large increases in spending on prescription drugs, especially when measured as a share of projected after-tax income. In the absence of efforts to control and even reduce prescription-drug prices, these rising costs will fall either on seniors themselves in the form of higher out-of-pocket expenditures and higher private-insurance premiums, or on taxpayers more generally in the form of a prescription-drug program. At an additional 0.75% of GDP per year by 2013, whether the incremental cost of prescription drugs over the next 10 years are borne privately or publicly, rising drug costs are large relative to other politically important benchmarks such as President Bush's recently proposed tax-cut plan (about 0.44% of GDP over the next decade).

A prescription-drug plan that tried to limit price increases, or even reduce prices, would go a long way toward alleviating the fiscal pressure. One option is to follow the lead of other advanced economies and implement direct price controls that prevent pharmaceutical companies from exploiting their government-granted patent monopolies. An alternative would be to use government money to fund expanded university, private, and public drug research (non-pharmaceutical company research already accounts for just under half of all drug research in the United States). The results of this publicly funded research would all enter the public domain. At that point, pharmaceutical companies would participate in a largely deregulated market that would reward companies producing and distributing drugs at the lowest price. Such a system could reduce overall private spending on drugs (for the whole population, not just the elderly) by about \$200 billion or 1.1% of GDP per year by 2013, with the additional research expenditures by the government almost completely offset by cost savings on existing government health care programs.

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## Appendix

We base the projections in Tables 1 and 2 on published data from the Congressional Budget Office (CBO) and on our own analysis of microdata from the Bureau of Labor Statistics' public-use version of the Consumer Expenditure Survey (CEX) for 2000.

To construct Table 1, we started with the CBO's estimate of average per-person private expenditure on prescription drugs for the elderly in 2003 (\$2,400) and deflated this figure to what it would have been in 2000 (\$1,421). We multiplied the latter figure by 61%, which is the percentage of drug expenditures that CBO estimates are paid either directly by the elderly, or through insurance they currently purchase. Separately, we used the CEX to calculate per-person private expenditure on prescription drugs and private health-insurance for "all-elderly" households (households where all members are 65 or older) on average and for each before-tax income quintile.<sup>11</sup> We combined direct expenditures on prescription drugs and private health insurance in recognition that an important part of the expenditures made by private health insurance for the elderly is for prescription drugs. Since the per-person levels of prescription-drug expenditures (plus health insurance) calculated using the CEX don't exactly match the CBO estimates, we then scaled the CEX-based quintile expenditures by the ratio of our CEX-based average expenditure to the CBO average, in order to make our projections as compatible as possible with those of the CBO. In effect, we have used the CBO to set the average level of expenditures and the microdata from the CEX to look at the implied spread of expenditures around the CBO average. The resulting ratios of quintile expenditure to average expenditure were: first quintile, 66.2%; second quintile, 82.0%; third quintile, 109.1%; fourth quintile, 119.8%; and fifth quintile, 126.5%.

This scaling procedure also has the advantage that it reduces any errors that may be introduced by including CEX expenditures on private insurance in our estimate of total prescription drug expenditures. The scaling ensures that non-prescription-drug-related portions of private-insurance premiums can't push our estimated level of prescription-drug expenditures above the presumably more accurate CBO baseline. We then applied CBO's own estimate of average growth in prescription-drug expenditures (10.1%) to the 2000 figures for each quintile to calculate projected expenditures for the years 2003-2013.<sup>12,13</sup>

We made one final adjustment to produce the data in Table 1. The percentage (61% in 2000) of drug expenditures paid either directly by the elderly or through currently purchased insurance is assumed to rise to 74% in 2013. This path assumes that the share of the prescription drugs purchased by the elderly that are paid by employer-provided insurance falls from 26% in 2000 to 13% in 2013, dropping at the rate of 1.0 percentage point annually. While this assumption is consistent with recent trends towards lower rates of employer-provided health insurance for

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<sup>11</sup> In practice, when using the CEX data, we worked with households and made subsequent adjustments based on average household size by quintile. The average household size for our sample of "all-elderly" households in the CEX was 1.38.

<sup>12</sup> CBO, 2002, table 4.

<sup>13</sup> The per capita drug expenditure projection appears in CBO, 2002 table 4.

retirees, and for less generous benefits for those receiving coverage, as noted by CBO, the assumed rate of decline in coverage could prove too fast or too slow.<sup>14</sup>

To construct Table 2, we used the expenditure figures in Table 1 and our own calculations of average quintile income. The projections assume that average real income for elderly households grows by 1.1 percentage points annually, the growth rate in average real wages projected in the 2002 Social Security trustees report (Table V.B.1). (Benefit growth for new retirees is linked to the growth in the average real wage.)<sup>15</sup> Our methodology implicitly assumes that the distribution of income among elderly households will remain unchanged between 2000 and 2013.

Note that our projections assume that for both Table 1 and Table 2 the distribution of spending on the combination of health insurance and prescription drugs is the same as the distribution of spending on prescription drugs alone. Since health insurance is also used to cover other health expenditures by seniors, there is likely to be some divergence in the distribution of these two categories of expenditures. Our projections also assume that the lower percentage of drugs expenditures covered by employer-provided insurance does not affect the distribution of spending by quintile. This is almost certainly wrong, since higher-income seniors are the ones most likely to currently be receiving drug coverage through an employer-provided plan. As a result, the projections in this paper may overstate the growth in prescription drug spending for the bottom quintiles and understate the growth in spending for the top quintiles. As discussed in the text, these projections also assume that the distribution of spending by quintile remains constant at the 2000 level. This is implausible, since many lower income households will find themselves unable to afford drugs recommended by their doctor, in the absence of additional government assistance.

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<sup>14</sup> See Hewitt Associates, Kaiser Medicare Policy Project, *Retiree Health Trends and Implications of Possible Medicare Reforms* (Washington, D.C.: Hewitt Associates, September 1997), available at [www.kff.org/content/archive/1318/retiree\\_r.html](http://www.kff.org/content/archive/1318/retiree_r.html).

<sup>15</sup> The 2003 income levels assume that the real income of elderly households increased by 3.3 percentage points in total between 2000 and 2003. The projected nominal growth rate used in these projections is 3.6%, which includes an expected 2.5% average annual inflation rate.