

# Why Lower Drug Prices Benefit Institutional Investors: an application of universal ownership theory

Steve Lippman\*, Daniel E. Rosan and Adam Seitchik

Changes in prescription drug prices have broad ripple effects across the diverse portfolios that most institutional investors hold. Lower prices cut into pharmaceutical company profits, but improve the overall productivity and profitability of other investable sectors of the economy. This paper considers the net impact of cuts in drug prices on investor portfolios. We find that falls in pharmaceutical company profits resulting from price cuts would be largely if not fully offset by a combination of health plan cost-savings and increases in consumer spending power. Furthermore, falling drug prices benefit investors through the dynamic benefits from a healthier workforce with greater access to prescription drugs. We conclude that, from the perspective of the broadly diversified "universal investor", support for lower drug prices is consistent with a fiduciary duty to seek attractive long-term returns at the portfolio level. Strategies for shareholder activism should be expanded, including engagement with corporate health care purchasers and advocacy for public policy reform.

**Keywords:** Drug prices, pharmaceutical pricing, health care costs, shareholder activism, universal owners, universal investors, shareholder resolutions, socially responsible investing, fiduciary duty

## Introduction

Institutional investors are increasingly called upon in their roles as fiduciaries to consider complex environmental, social and governance (ESG) questions, from corporate governance reforms to climate-related business disruptions. A growing body of legal theory supports consideration of ESG issues within fiduciary duty (United Nations, 2005). Additionally, trends towards index investing make the application of universal ownership theory relevant to an increasing number of institutional investors and fiduciaries. As a case study, we apply concepts of universal owner theory and fiduciary duty to a specific real-world issue fiduciaries currently face: efforts to stem increasing drug prices in the United States.

Healthcare spending is now 16.0 per cent of GDP, up from only 13.6 per cent 10 years ago and rising healthcare expenditures and lack of

access to care have sparked debate among policymakers at all levels (Arnst, 2005; Pear, 2006).<sup>1</sup> All elements of healthcare costs have risen dramatically, with the cost of prescription medicines consistently among the fastest-growing segments (Smith, 2004). Drug prices are one of the most visible health care expenditures to consumers and have become a hot political issue. For example, a 2005 Kaiser Family Foundation poll found almost two-thirds (65 per cent) of Americans support more government regulation of prescription drug prices (Kaiser Family Foundation, 2005a). The National Conference of State Legislatures reported that in 2005 more than 600 separate bills and resolutions in all 50 states were proposed to address policies affecting access, affordability and control of prescription drug spending.<sup>2</sup>

In addition, concerns about rising drug prices have emerged from an unexpected source: institutional investors. These investors

\*Address for correspondence: Trillium Asset Management, 715 NE 60th Street, Seattle, WA 98115, USA. Tel: 206-633-7815; E-mail: slippman@trilliuminvest.com

hold drug company stocks and presumably benefit from profits generated by high prices. Nonetheless, a diverse set of public pension funds, religious institutions and labour funds have filed a wide variety of shareholder resolutions addressing high drug prices *and these resolutions have gained strong levels of support from other investors* (Welsh, 2005).

Support for a shareholder proposal calling on Pfizer to report on efforts to contain price increases of its most-prescribed drugs to levels at or below inflation doubled from 5 per cent in 2004 to 11 per cent in 2005.<sup>3</sup> In 2004, Governor Tim Pawlenty (R-MN) travelled to Pfizer's annual stockholder's meeting to speak for the resolution, arguing "the current price structure for prescription medicines is unsustainable. As shareholders, it's appropriate that we ask how business strategies can be changed and improved to address the current reality" (Pawlenty, 2004).<sup>4</sup>

Shareholder proposals calling on various drug makers to not constrain the reimportation of prescription drugs into the US by limiting the supply of drugs in foreign markets were sponsored by the American Federation of State, County & Municipal Employees, the Maine State Treasurer, the New York City Employees Retirement System, the New York State Common Retirement Fund, Ohio Public Employees' Retirement System, Vermont State Employees' Retirement System and Vermont State Teachers' Retirement System. These funds have combined assets of US\$183 billion.<sup>5</sup> The proposal received a high water mark of 23 per cent support at Wyeth, while a similar proposal that called for a report on the risks of fighting re-importation filed by the Minnesota State Board of Investment received the support of 28.5 per cent of Pfizer shareholders (IRRC, 2005).

### *Scope of this paper*

Given this real-world backdrop, we intend this paper to help inform decisions by institutional investors about whether, as fiduciaries, they should be supportive of lower drug prices. In particular, we seek to answer the question: "What impact does pharmaceutical pricing have on the profitability of American business, and what are the implications for 'universal owners' that are invested broadly in the US stock market?"

The vast majority of institutional investors pursues broad diversification, and hence are "universal owners", with extensive exposure to all major sectors of the equity market. Institutional investors, in aggregate, also hold the controlling interest in virtually all US publicly traded corporations. We are not aware of past

efforts to evaluate the impact of pharmaceutical price constraints on the portfolios of universal shareholders. We seek to fill this gap.

We limit our scope of analysis to the US pharmaceutical market and impacts on publicly traded US companies only. Our analysis rests on research that suggests that lower drug prices will yield social benefits from increased rational utilisation of pharmaceuticals and that price reductions need not impact other social goods such as private-sector research and development. Drawing on the existing research literature and basic economic theory, we examine the effects of lower drug prices on the profitability of US businesses (and hence, diversified portfolios) under two sets of assumptions: a static case which introduces the major potential winners and losers from falling drug prices, and a dynamic case which reviews some of the broader beneficial impacts of lower drug prices. These thought experiments lead us to conclude that the impact of lower drug prices on investors broadly exposed to the US stock market will range from neutral to modestly beneficial. Finally, we provide some implications for trustees of investment institutions, the boards of pharmaceutical companies, and US businesses as a whole based on our findings.

For the universal investor, the analytical frameworks we present suggest that shareholder efforts to constrain pharmaceutical price increases are not in conflict with institutional investors' responsibilities as fiduciaries. In fact, while fiduciary action may not be viewed as legally required, investors could rightly see such activism as an exercise of their fiduciary duty. Of course, one of the obstacles facing these types of resolutions at drug companies is that lower prices may not be perceived as in the narrow financial interest of pharmaceutical company shareholders, or the corporate boards acting on their behalf. Benefits to shareholders may instead accrue at the total portfolio level. As such, the fiduciary push for lower prices could also be pursued in other ways, such as with companies where pharmaceutical purchases are a major expense, or through the public policy arena.

### **Foundations of our analysis: background on the pharmaceutical market and on institutional investors as universal owners**

In this section, we explain key aspects of the pharmaceutical industry and of institutional investing which underlie our analyses.

### *The special nature of the pharmaceutical market*

The first dose of a drug produced by a pharmaceutical company as part of a commercial batch costs an immense amount of time and money. A commonly cited 2003 study by the Tufts Center for the Study of Drug Development estimates that on average, it costs about US\$802 million and takes 12 years to bring a new drug to market (DiMasi *et al.*, 2003),<sup>6</sup> whereas the marginal cost of producing an additional tablet or pill is often mere nickels (Berndt, 2002). The fixed costs associated with developing a new pill include basic research, animal testing, human clinical trials and regulatory approval. In addition, manufacturers have to develop facilities to ensure that each pill is exactly the same. After spending the hundreds of millions it typically takes to manufacture and market the first pill, the second pill is essentially free.

Of course, that is an overstatement. But the marginal cost of production of pharmaceuticals is quite low, and bears very little relation to the cost of the product. In this way, drugs are similar to software, music, movies or video games. In all intellectual property industries, getting to the first product is very difficult and costly, but the marginal cost of production of additional products approaches zero.

### *Incentives to innovate*

Drug companies undertake this exercise because of the incentive system created by patents. Patents are one of a variety of ways to create government-sponsored incentives for innovation.<sup>7</sup> Patents on drugs create a trade-off: companies disclose how the drug works and its formula, and in exchange the government prevents any other party from selling the drug during the patent life. A patent's duration is 20 years from the date of filing with The United States Patent and Trademark Office. Patents are granted prior to market approval by the Food and Drug Administration, however, so companies typically get about 12–14 years of market exclusivity.<sup>8</sup>

Pharmaceutical companies therefore are able – indeed, encouraged – to charge monopoly prices during the patent life to attract the investment capital necessary to fund the initial research and development costs associated with developing a new drug.

### *Drug pricing*

Once a drug is on the market, companies take additional steps to maximise profit as part of a series of negotiations with healthcare purchasers. Drug companies may sell their pro-

ducts to pharmacies, to intermediaries such as wholesalers, to pharmacy benefit managers, to employers, to governments or to insurance companies. Before a drug reaches a patient it is “touched” by several of those players.

In 2005, domestic US demand for pharmaceuticals was US\$223.5 billion, according to the Centers for Medicare and Medicaid. Of that amount, private insurance paid 47 per cent, with out-of-pocket costs financing an additional 29 per cent. Government programmes paid 24 per cent (Heffler *et al.*, 2005). We expect the new Medicare Part D benefit, which came into force in 2006, will increase government expenditures on prescription drugs and reduce out-of-pocket costs and private health insurance.

Drug manufacturers price discriminate because of the pharmaceutical market's structure. Patents give drug makers market exclusivity. They negotiate different prices among diverse buyer groups with varying elasticities of demand. For instance, third-party buyers who represent large groups of consumers and have high price elasticity have their own negotiating tools. Buyers demand discounts or rebate schemes in exchange for volume sales. They use formularies – a list of approved medications – to negotiate (Berndt, 2002). Insurance companies and benefits managers typically have a “two-tier” or “three-tier” method to contain pharmaceutical spending, charging consumers a low co-payment for a generic drug and a higher co-payment for a brand-name drug, and in some cases not covering certain branded drugs. Therefore, inclusion in formularies represents a substantial market advantage. For brands, which are not included, patients pay higher out-of-pocket expenses and are likely to switch to a competing product. Governments, insurance companies and pharmacy benefits managers all negotiate in this way. Despite these tools, the drug makers' monopoly position gives them an advantage, as evidenced by continually rising drug prices.

In contrast to bulk purchasers, uninsured individual buyers have low price elasticity and limited power to influence pricing (Congressional Research Service, 2001). They cannot go elsewhere or forgo taking essential drugs, and are consequently charged higher prices. Many buyers fall in between these endpoints, with negotiating power determined by their potential sales volume. Price discrimination yields higher profits because drug makers sell products at a different price to each segment according to its buying power and price sensitivity (Frank, 2001).

The complex nature of pharmaceutical consumers also hinders market transparency and

favours differential pricing. Indeed, no other consumer product we know of is picked by one player (the doctor or nurse practitioner) consumed by a second player (the patient) and funded by a third player (the health care purchaser).

Finally, other players in the pharmaceutical value chain, such as pharmacists and wholesalers, add surcharges onto the initial drug prices. Different patients find considerable variation in drug prices, depending on the nature and presence of insurance coverage, place of purchase and the structure of particular pharmacy benefit plans (Frank, 2001). In 1999, the Department of Health and Human Services calculated that the median price difference between cash payers and third-party payers for the 200 most commonly prescribed drugs was 14.6 per cent (United States Department of Health and Human Services, 2000).

### *Pricing transparency*

The low marginal cost of production and the high sunk capital costs of drug development incentivise manufacturers to make a sale even if revenue is relatively low, as long as revenue remains above the marginal cost of production. Obviously, pharmaceutical manufacturers do not want other customers to know they have done so, because that reduces their ability to segment the market. The lack of pricing transparency is thus an important element of maintaining high prices.

Drug companies do report a wide variety of price points to government regulators, but because of the complicated system described above, they bear little resemblance to the actual payments made by health care purchasers (currently a source of a great deal of litigation). Therefore, the industry lacks the pricing transparency that is an essential foundation for well-functioning free markets.

Products such as cholesterol drugs like Lipitor, Zocor and Crestor, which have comparable quality, safety and efficacy profiles, operate in a tight oligopoly in which firms compete on the basis on advertising, marketing and relatively minor differentiating attributes, rather than on price. This allows for the continuation of non-competitive pricing and oligopolistic profits.

### *Relationship of prices to research & development*

Pharmaceutical managers justify high prescription medicine prices to policymakers and the public by pointing to their significant research and development costs. Often drug makers and their surrogates claim that lower

prices would stifle innovation and the development of new "breakthrough" drugs, and would ultimately harm patients (Pharmaceutical Research and Manufacturers of America, 2003). While draconian price reductions could eventually impact research, the relationship between price, profitability and R&D is not so straightforward, for five reasons.

First, when prices and profits have been at historic highs, pharmaceutical company research productivity has been low. There does not appear to be a correlation between profitability and research productivity in a given year. For instance, while retail prescription prices increased an average of 8.3 per cent a year from 1994 to 2004 (triple the annual inflation rate of 2.5 per cent), manufacturing R&D spending as a percentage of sales actually fell from 17.3 per cent in 1994 to 15.9 per cent in 2004 (Kaiser Family Foundation, 2005b). Further, analysts have not found higher rates of R&D investment or levels of innovation among US-based drug manufacturers versus those based in countries where drug prices are significantly lower than in the US (Light and Lexchin, 2005).

Second, companies commit greater resources to marketing, sales and administration than they do to research and development. In 2002, Fortune 500 drug companies channelled 17 per cent of revenue into profits, 14.1 per cent into research and development and 30.8 per cent into marketing and administration.<sup>9</sup> The Kaiser Family Foundation reports that in 2004, drug makers spent a total of US\$38.8 billion on R&D, versus US\$11.9 billion for advertising and another US\$15.9 billion on the retail value of drug samples (Kaiser Family Foundation, 2005b). Direct-to-consumer advertising reached US\$4 billion in spending, 15 times greater than ten years earlier (Kaiser Family Foundation, 2005b).

Third, much of pharmaceutical company investment is dedicated to "me-too" or "follow-on" drugs. Research and development is devoted to copying blockbuster drugs rather than addressing unmet medical needs. Less investment is required to develop follow-on drugs because they are modifications of existing drugs (National Institute of Health Care Management, 2002). We do not discount the value of research into follow-on drugs; these drugs produce clinical and economic benefits, including reducing side effects and improving efficacy profiles, reduction in adverse drug reactions and drug-to-drug interactions, different dosing schedules and delivery systems (Wertheimer *et al.*, 2001). However, the notion that all research and development is spent on cutting-edge therapies is simply wrong.

In addition, a great deal of funding categorised by drug makers as research and development is used to market drugs to doctors through post-approval studies. Sometimes such studies have clinical value, by for example finding a new application for an existing drug. Often they are motivated at least in part, however, by a desire to engage and compensate doctors for prescribing the drug (Relman, 2001).

In addition, companies are forced by the patent system to continually re-invest in research and development because they know, often to the day, when their current level of sales for a given product will plummet. Even companies that cut staff will typically protect research and development. Merck recently announced 7,000 job cuts but specifically informed analysts that R&D funding would be maintained at existing levels (Clark, 2005).

Finally, in a capital-constrained environment, companies can plausibly argue that to attract the large concentrations of capital necessary to do research and development, they must provide superior returns. We do not believe the American investment environment to be capital-constrained. Furthermore, in 2004 pharmaceutical companies generated 16 per cent profits as a percentage of revenues compared to 5 per cent for all Fortune 500 firms, suggesting that pharmaceutical companies will likely continue to attract investors even with modestly lower margins on products (Kaiser Family Foundation, 2005b).

Industrial organisation research has long noted the extraordinary levels of profitability in the pharmaceutical sector, suggestive of the pricing power that comes from less-competitive industries. This indicates ample room for price cuts before profits fall to a normal level (including compensation for research and development). A simulation study by Abbott and Vernon found that significant price cuts (along the order of 50 per cent) would have appreciable impacts on R&D, but that modest cuts on the order of 5–10 per cent would likely have negligible impact.<sup>10</sup>

Drug research and development is a critical social good generated by the private sector. However, modestly lower profits caused by more transparent and competitive pricing has a very low probability of impacting the degree and quality of drug company research and development. Furthermore, reduced company profits are only one of several possible scenarios stemming from lower drug prices.

### *Institutional investors as universal owners*

Institutional investors appropriately evaluate their financial performance from the perspec-

tive of overall risk and return. No matter how diverse the underlying strategies, an institutional board or investment committee properly focuses on the overall wealth generation of the whole, as well as its volatility characteristics in the aggregate. Academic theory and empirical research suggests that the primary determinants of these overall financial returns are a Fund's relative exposures to asset classes such as stocks and bonds, and the long-term returns accruing to those asset classes. Since most institutional investors have the majority of their assets invested in domestic publicly traded securities, the long-term total returns of broad-based US stock indices will be a primary driver of fund performance.

The importance to large-scale institutional investors of overall market returns is reflected in their healthy demand for passive, low-cost index investing. Indexed investment funds now account for approximately 30 per cent of bond and equity investments in the US (Fender, 2003). How any one company or industry performs may be of great importance to an active fund manager, but in fact has little influence on the overall financial performance experienced by institutional investors engaged in index investing and other forms of universal ownership.

Given that the long-term total returns generated from the domestic stock market are the most important influence on institutional investor performance, it is important to pay attention to the key driver of those returns, which is the overall profitability of the economic system. The importance of profits to investors can be seen by breaking the total return from the stock market into its three component parts: (1) the yield from dividends (2) growth in profits and (3) changes in valuation, i.e. a movement up or down in prices for a given level of profits. In the long run the most important of these three drivers of stock market returns is the growth rate of profits, which itself is primarily a function of overall economic expansion.<sup>11</sup>

This bird's eye view of institutional investing leads rationally to an emphasis on system-wide, long-term, sustainable profit growth. As some corporate governance experts have argued, "A universal owner owns a small but representative fraction of most of the companies in an economy. Thus its ability to satisfy its fiduciary duties depends heavily on overall macroeconomic efficiency and performance rather than on performance of any particular firm it might own" (Hawley and Williams, 2002, p. 284).

While fund managers may want to talk to their clients about the prospects for a single company or sector, this in fact should be of

little interest to the institutional investor. From the bottom-line perspective of overall fund performance, the profits of any single company or sector are important to the large-scale investor only insofar as they impact on the profits of the whole. As such, the investment consequences of a fall in pharmaceutical company share prices should be approached holistically, incorporating the potentially negative impacts on pharma company profits as well as the potentially positive benefits to the profitability of other publicly traded companies in investors' portfolios.

### **Analysis of the static case of drug price cuts: pharma pricing as a zero-sum game**

In the next two sections we examine the effects of a fall in drug prices on pharmaceutical companies, institutional investors, consumers and employers. While there are several prospective outcomes from a reduction in pharmaceutical prices, we find that overall the mark-down benefits the universal investor could have only modest impacts on pharmaceutical profitability and is socially beneficial.

Falling drug prices can be spurred on by changes in supply conditions, shifts in demand, regulatory changes, pressure from stakeholders or the government, or a combination of all of these factors. High levels of profitability in the pharmaceutical sector indicate price-setting power that stems from less-than-competitive markets. Within such markets, cuts in prices spurred on by stakeholders are likely to lead to *increases* in both supply and demand, as long as prices remain high enough to generate at least a normal level of profit and cover both average and marginal costs. In microeconomic theory, monopolistic pricing creates a "deadweight loss" due to inefficient use of resources. The efficiency benefit from falling prices and higher output leads to greater economy-wide productivity.

We begin our analysis with the simplifying assumption that the drug company responds to stakeholder pressure to cut prices in the context of perfectly inelastic demand, and thus the price cut has no impact on production, investment or on the demand for the drug itself. Under this highly conservative assumption, the only immediate impact of a fall in drug prices is to reduce pharmaceutical company revenue and profits. However, that loss of profits represents direct savings for customers, including the corporate customers that often fund prescription drug benefits. So even with no increase in output, falling prices have broad beneficial impacts.

Under the static and simplifying assumption of finite demand, falling drug prices represent a zero-sum game, where the financial losses to the drug companies are exactly met by the gains to their retail, government, insurance and corporate customers, with no incidental benefits or costs. In the following section, we provide for greater realism by assuming some price elasticity, and thus explore the potential dynamic impacts of falling drug prices on consumers, producers and – most importantly for this report – investors.

In determining the impact of lower prices on drug manufacturers' profitability, it is worthwhile reviewing the basic relationships between cost, pricing and profits. As previously noted, prescription drugs have a high fixed cost of development, with a low marginal cost of production. It is in the pharma company's profit-maximising interest to expand sales as long as marginal costs are below incremental revenue. Total profits equal total revenue minus the sum of fixed and marginal selling costs. Imagine, for example, that a drug with US\$1 billion in annual revenue has an annualised amortised cost of development of US\$200 million, ongoing production/distribution/marketing costs of US\$300 million and profits of US\$500 million. A 10 per cent reduction in prices would, with no impact on supply or demand, reduce revenue and profits by US\$100 million.

From the narrow perspective of an investor solely exposed to pharmaceutical companies, the pharma company's management and board and the pharma stock analyst, this is a clear negative, especially under the static assumption we make in this section that the price cut has no impact on either the supply or demand for prescription drugs. Even assuming no impact on sales or production, however, this narrow perspective on the impact of price reductions is not the end of the story for the broadly diversified institutional investor. Revenues to pharma companies represent costs to consumers who purchase drugs directly, and to the vast majority of publicly traded companies that offer prescription drug benefits. In 2005, approximately 60 per cent of US employers offered health insurance as an employee benefit and 98 per cent of those plans included a prescription drug benefit (The Kaiser Family Foundation and Health Research and Educational Trust, 2005). Thus a pharma company's price reduction is mirrored exactly by their customer's drop in expenses.

The savings from lower drug prices represent additional income elsewhere in the system. If it accrues to insurers, this could benefit investors directly via increased insurance

company profitability. If the government gleans savings, the benefits to investors could come via higher levels of consumption, government spending in other non-medical areas or lower interest rates resulting from smaller federal deficits.

Drug purchases by corporate buyers or their covered employees represent a pure business expense. If US\$1 billion in purchases becomes US\$900 million via a price cut, then the impact on business costs and profitability is direct and immediate. Every dollar of lost revenue and profit in the pharma sector becomes a dollar of lowered cost and additional profit for industrial, financial, consumer and technology companies. While profits have been redistributed, the overall profitability of the portfolio has not been negatively impacted, and the impact on the broad-based investor should be nil.

In the case of drugs bought directly by consumers, the dollars saved by lower drug prices have the same impact as a tax cut or a rise in family income. Given the very low savings rates in the United States, this extra discretionary income will largely get recycled as part of consumer demand, again creating revenue and profit within diversified sectors of the American economy. Since only about 15 per cent of American GDP is traded with other countries, most of this income and spending will accrue directly to the United States corporate sector (United States Department of Commerce, 2004). Furthermore, at least some of the leakages abroad would be captured in investor portfolios as revenues and profits accruing to US multinationals or foreign publicly traded corporations.

The above example suggests that lowering drug prices may impact pharma profitability, but within the context of shifting profits from one sector of the economy to the other – in other words it is a classic “zero-sum game” in which losses are largely if not fully offset by gains. If lower drug prices neither spur additional demand nor choke off existing supply, there is likely to be little or no impact on overall corporate profitability in investor portfolios. Given that the buyers of drugs are American corporations and consumers, this is not a surprising result, but one that is generally not considered by investors as they work through the likely impact of lower drug prices on their overall portfolios.

### Analysis of the dynamic case for lower drug prices

For simplicity’s sake we assumed in the previous section that lower drug prices would have

no impact on consumer demand, but clearly this is not the case. Affordable access to pharmaceuticals is an important public policy issue, and a number of studies have shown that high costs reduce access to drugs – in other words, that demand is sensitive to price. Lower drug prices could modestly increase demand by contributing to reduced co-payments, expanded private insurance coverage and improvements in state benefits. As the pharma company moves from being a price-maker to a price-taker, output should increase as long as pricing allows for at least a normal rate of profit and remains above marginal and average costs. The economy realises efficiency gains as the supply of pharmaceuticals expands and the “deadweight” allocation inefficiency from monopolistic pricing is reduced.

Under static assumptions about demand the percentage impact on pharma company revenue from a cut in price from  $P_0$  to  $P_1$  is  $1 - (P_1 / P_0)$ . For example, if price went from US\$10 to US\$9, then revenue would be reduced by  $(1 - 9/10)$ , or 10 per cent. If in fact demand grows as prices fall, then profits would not shift from drug companies to other economic sectors on a zero-sum basis. Under the dynamic case the overall impact on revenue is dependent not only on price, but also on demand. Specifically, the percentage impact on revenue is  $1 - (P_1 / P_0 * Q_1 / Q_0)$ . So if demand rose by 11 per cent as pricing fell by 10 per cent, the impact on overall revenue would be  $1 - (0.9 * 1.11)$ , or 0 per cent. If demand is even more “elastic” than this, then revenues could actually increase as prices fall.

Rex Santerre of the Center of Healthcare and Insurance Studies, University of Connecticut School of Business, found the out-of-pocket own-price elasticity of demand for pharmaceuticals to be inelastic with a point estimate of  $-0.48$ . The relatively price-inelastic estimate of  $-0.48$  suggests that a 10 per cent decrease in the out-of-pocket real price of prescription drugs increases the quantity demanded of prescription drugs by about 4.8 per cent, *ceteris paribus*.<sup>12</sup> A previous estimate looking solely at elderly populations found an estimated price elasticity of  $-0.34$  (Coulson and Stuart, 1995).

One way that demand could expand as drug prices fall is through a reduction in consumer co-payments. Average co-payments for prescription drugs have risen sharply as employers have responded to steady increases in prices. For instance, between 2000 and 2005, co-payments for preferred drugs rose 69 per cent and those for non-preferred drugs doubled (Kaiser Family Foundation, 2005b). A reduction in drug prices could stem this trend of higher co-payments, or even lead to lower nominal co-pays over time. As the real cost of

co-payments falls as a percentage of employee income, the demand for prescription drugs would increase.

More affordable drugs would also expand access for workers currently left out of the system. The number of companies in labour-intensive industries such as retail offering prescription drug benefits would likely increase. Similarly, coverage within state-sponsored plans might improve. The broader the fall in drug prices, both in terms of companies participating and medicines covered, the more powerful the likely impact on coverage and ultimately demand.

If pharmaceutical companies believed that lower prices would increase their profitability, then they would presumably have already cut prices, and not spend millions of dollars lobbying against government-imposed price cuts. Thus it is unlikely that cuts in pricing would be profit-enhancing or even revenue-neutral to the pharmaceutical companies themselves, but it is quite likely that there would be at least some positive revenue impact.<sup>13</sup> This would allow for cuts in drug prices to become a positive-sum game overall: having a smaller negative impact on drug industry profits than it does on profitability elsewhere in the economy.

The dynamic impacts of lower drug prices could extend well beyond the direct economic benefits of higher utilisation. Better access to needed pharmaceuticals would result in a healthier, more productive workforce. The productivity losses from employee health problems are significant, and improved medical care would increase production, revenue and profitability in a broad cross-section of industries (Davis *et al.*, 2005).

It is estimated that the lost economic output resulting from the combination of not working, sick days and inferior productivity on the job totalled US\$260 billion in 2003 – roughly 2.4 per cent of gross domestic product (Davis *et al.*, 2005). Unsurprisingly, workers without health benefits or with minimal health benefits are less productive on the job than those with comprehensive benefits.

*Health Economics* reported that the net benefits to employers from having workers take prescription medicines for their chronic illnesses are substantial and result because prescription medications substantially lower absenteeism among chronically ill workers (Rizzo *et al.*, 1996; see also Goetzel *et al.*, 2004). As a more specific example, the *Journal of Occupational and Environmental Medicine* looked at the economic toll of depression. They found it is high relative to that associated with other acute and chronic illnesses, and that this economic burden is disproportion-

ately attributable to indirect costs, such as absenteeism from work. Absence from work directly impacts both patients and their employers, and treatment of the disease clearly lessens this burden (Claxton *et al.*, 1999).

Lowering the price of pharmaceuticals provides consumers and employers an opportunity to allocate more resources towards health, while at the same time diverting resources to other goods and services. This investment has the potential to yield long-term economic pay-offs for individuals, families, employers and the economy as a whole due to the improved health and productivity of the workforce (Claxton *et al.*, 1999). Affordable prescription pharmaceuticals help guard the health of Americans and sustain a healthy American economy.

## Implications and conclusions

Institutional investors have an interest in seeing the broad universe of American business increase its profitability, and be well positioned to sustain profits over an extended time horizon. Insofar as that happens, the profitability of any particular holding is less important. Our finding is that lower pharmaceutical costs have the potential to increase the profitability of American business, with varying possible impacts on the pharmaceutical sector.

In summary, the impact of lower drug prices on investors heavily exposed to pharmaceuticals could be slightly negative, or could approach neutral if lower prices boosted demand significantly. The impact of lower drug prices on universal owners is likely to be either neutral or positive, and universal owners who also purchase health care services for their beneficiaries may see additional benefits from lower drug prices. For the majority of institutional investors, then, the downside risk of pursuing lower drug prices is contained, and quite likely to be exceeded by the potential upside.

There are a number of implications: differing fiduciary duties between universal owners and narrowly-defined investors; potential actions by universal owners on pharmaceutical prices; and broader questions about the role of universal owners in the health care policy environment.

From the perspective of the investor, fiduciary duty *varies* depending on whether they are invested in pharmaceutical companies narrowly, or in diversified portfolios. A recent report on fiduciary duty by a leading global law firm notes, “[T]here is no duty to ‘maximize’ the return of individual investments, but



instead a duty to implement an overall investment strategy that is rational and appropriate to the fund" (United Nations, 2005, p. 8). Thus, for diversified investors, shareholder resolutions and other actions to reduce drug prices would be consistent with fiduciary obligations. Fiduciaries owe no duty to other stockholders, or to the companies in which they invest, but only to their own beneficiaries. And lower drug prices would, as we conclude, have a neutral or even positive impact on the overall portfolio.

There are a number of potential actions universal owner fiduciaries might take to reduce drug prices. Most often, investors have simply encouraged pharmaceutical firms to move toward drug price restraint. They have done so by:

- Increasing shareholder pressure on pharmaceutical companies to moderate drug prices.
- Improving the governance structure of companies to enhance risk management and long-term planning.
- Attempted to reduce the barriers pharmaceutical companies erect to re-importation of drugs from other markets (i.e. Canada).

In addition, investors might also consider:

- Pursuing shareholder advocacy *outside* the pharmaceutical industry to push for lower drug prices and thus increase productivity and profitability broadly across the portfolio.
- Taking public policy positions which address the profitability drug health care costs represent for American business, and advocate for broad-based reform.

For several years, the authors have been affiliated with the Interfaith Center on Corporate Responsibility (ICCR), which is one of several investor groups practising active shareholder strategies. ICCR and several state pension funds have pursued engagement strategies designed to directly or indirectly reform drug pricing. Institutional investors should consider expanding their activism to address the negative impacts high pharmaceutical prices have within a number of industries. This would be an opportunity for corporate buyers to put downward pressure on pharmaceutical costs, and thus improve investment performance across their portfolio via pricing changes at pharmaceutical firms.

A word of caution – some reviewers of our work have questioned the implications of requiring fiduciaries to engage in shareholder activity or public policy engagement as part of their duties as universal owners. Some of us (Seitchik and Lippman) already engage in

such work, and one of us (Rosan) advises institutional investors on shareholder activism strategies. We do not argue such activities are *required* by fiduciary obligations, merely that they are permitted. We *encourage* these actions because, we argue, they are likely to have a positive impact on the overall portfolio.

Our analysis of drug pricing also raises broader questions about the role of universal owners in the health care policy environment. Corporate boards, including directors of pharmaceutical companies, have their own fiduciary duties to act in the long-term interest of company shareholders. As part of this duty, they could certainly decide to moderate pharmaceutical price increases to avoid the risks of price controls or other policy measures that would threaten future profitability. (Indeed, some major pharmaceutical manufacturers have at times voluntarily limited their price increases to rates of inflation, although we are not aware of companies with such a policy currently in effect.) However, they are unlikely to act to benefit universal investors at a material expense to their own company's profitability and shareholder returns. For this reason, universal investors could benefit from supporting public policies that advance their overall interest in limiting drug prices.

In our view, institutional investors would be safely within their fiduciary bounds to seek improved public health care policy. While further research is called for – and we have not considered policy solutions here – health care represents an enormous challenge for the private sector from cost, productivity, competitiveness and management perspectives. Yet institutional investors, with the exception of some state pension and labour funds, have been largely absent from the public policy arena on healthcare issues.

We believe that public policy solutions to the health care crisis are urgently needed. It is in the interests of most firms, and thus institutional investors, for the United States to reform health care and shift costs from the private to the public sector. Other industrialised nations have put in place policy solutions, which accomplish the dual benefits of lowering system-wide health care costs and increasing access to health care, with the attendant economic and public health benefits. We see no reason why the United States cannot do the same. More research is needed in this area to evaluate the proper role for universal owners, but our discussion of pharmaceutical pricing leads us to believe that there *is* a role for broadly diversified investors to play. We hope the result of such engagement would be health care reform, which brings a more productive,

and profitable economic system generating improved long-term returns for diversified shareholders.

In conclusion, broadly diversified investors benefit from drug price moderation, and can pursue this goal through a variety of mechanisms. Since pharmaceutical costs are significant for virtually any company offering health insurance, activism should move well beyond the shareholder resolutions that have so far been focused on the pharmaceutical companies themselves. Activism across the portfolio, along with public policy efforts to lower drug prices and increase access to health care, may well be the most productive strategies for the universal investor on this topic.

## Notes

1. For more information on the debate and the increase in spending, see the Employee Benefit Research Institute's Fact's from ERBI section (<http://www.ebri.org/publications/facts/index.cfm?fa=0397fact>) (accessed 23, October 2006).
2. The National Conference of State Legislatures' website has a detailed breakdown of the 2005 Prescription Drug State Legislation (<http://www.ncsl.org/programs/health/drugdisc05.htm>) (accessed October 23, 2006).
3. Interfaith Center on Corporate Responsibility's website (<http://www.iccr.org/shareholder> accessed October 23, 2006) includes shareholder proposals for 2004–2005 as well as 2005–2006.
4. See the State of Minnesota's website ([http://www.governor.state.mn.us/tpaw\\_View\\_Article.asp?artid=895](http://www.governor.state.mn.us/tpaw_View_Article.asp?artid=895)) (accessed October 23, 2006). for more information on the Governor's remarks. One of the authors of this paper (Rosan) also attended the meeting.
5. Author's calculations based on latest available annual reports.
6. Note this estimate is much disputed by, for example, the Consumer Project of Technology, which has posted criticisms of DiMasi on their website (<http://www.cptech.org/ip/health/econ/rndcosts.html>) (accessed October 23, 2006).
7. James Love of Consumer Project on Technology has done work on other ways to fund and provide incentives for R&D (Love, 2003).
8. For an overview of the patent term restoration programme see the FDA's website ([http://www.fda.gov/cder/about/smallbiz/patent\\_term.htm](http://www.fda.gov/cder/about/smallbiz/patent_term.htm)) (accessed October 23, 2006).
9. Public Citizen (2003) reported that marketing and administrative costs are typically reported together rather than separately by drug companies.
10. See the National Bureau of Economic Research (NBER) Reporter, May 2005, summarising a simulation exercise conducted by Abbott and Vernon. Scherer finds abnormally high levels of profitability in the pharmaceutical industry dating back to the 1960s, 1970s and 1980s. Also see the paper by Scherer (1993).

11. See for example, Dimson *et al.* (2002). This is a comprehensive global study of 102 years of asset returns.
12. See Rexford Santerre and John Vernon's piece for the university of Connecticut's Center for Healthcare and Insurance Studies.
13. See for instance the analysis by Alan Sager and Deborah Soclar (2004) that if more than 44.53 per cent of prescription drugs re-imported from Canada to the US are new prescriptions, US drug makers' profits actually increase from re-importation despite the lower prices paid.

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**Steve Lippman** is Vice President of Social Research and Advocacy at Trillium Asset Management, and speaks widely and often on issues of corporate social responsibility. Steve was a founding co-chair of the Social Investment Research Analysts Network (SIRAN), a working group of the US Social Investment Forum. Prior to Trillium Asset Management, Steve spent four years working in the Environment Program at Business for Social Responsibility. He earned his bachelors degree from Stanford University and an MS in Natural Resource and Environmental Policy from the University of Michigan's School of Natural Resources and Environment.

**Daniel E. Rosan** is the Program Director for Public Health and Access to Capital at the Interfaith Center on Corporate Responsibility,

a faith-based corporate accountability organisation. There he drafts shareholder resolutions, conducts research, and acts as a media spokesperson. Dan has conducted field research on AIDS policy in South Africa, Kenya and Botswana, and authored *Benchmarking AIDS: evaluating pharmaceutical company responses to the public health crisis in emerging markets*. Beyond ICCR, he serves on the board of Jews for Racial and Economic Justice, has a BA *cum laude* from Vassar College, and loves to scuba dive.

**Adam Seitchik** is Executive Vice President and Chief Investment Officer of Trillium Asset

Management. Prior to joining Trillium, Adam was Chief Global Strategist for Deutsche Asset Management in London, where he led a team responsible for allocating over £40 billion in assets. He also has experience as an analyst and portfolio manager at Wellington Management, and was the Director of Strategic Research for John Hancock's Investment and Pension Group. Adam holds a PhD in economics from Boston University and early in his career was an assistant professor of Economics at Wellesley College. He became a Chartered Financial Analyst in 1993.