

**Life Sciences?
How “Maximizing Shareholder Value”
Increases Drug Prices, Restricts Access, and Stifles Innovation**

Submission to
the United Nations Secretary-General’s High-Level Panel on Access to Medicines

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SUMMARY

U.S. pharmaceutical companies have long justified their products' high prices by claiming that large profits are indispensable to increasing research budgets. Yet over the decade 2005-2014 19 pharmaceutical companies in the S&P 500 Index spent \$226 billion repurchasing their own shares, equivalent to 51% of their combined R&D expenditures over this period. Typical of their industry, the top three U.S. drug makers by revenue during 2005-2014 – Johnson & Johnson, Pfizer, and Merck – together bought back \$126 billion of their own shares, equaling 46% of their net income in that decade and 55% of their R&D expenditures. These stock buybacks, which are in addition to dividend payments, are done in the name of “maximizing shareholder value” (MSV). Buybacks give manipulative boosts to the company's stock price and, by reducing the number of shares outstanding, increase earnings per share (EPS), a widely accepted indicator of a company's performance. Rising stock prices enrich senior executives, who receive most of their compensation in the forms of stock options and stock awards. In 2014, the 30 highest-paid pharma executives averaged \$46.2 million in total direct compensation, of which 67% came from stock options and 22% from stock awards. Legitimized by MSV ideology, high drug prices result in high stock prices, which, with help from buybacks, put corporate profits in the pockets of top executives. As a prime example of the adverse influence of MSV on drug prices, access to medicines, and medical innovation, we highlight the case of Gilead Sciences, a U.S. company whose CEO's annual compensation exceeded \$200 million in 2015. We critique the MSV ideology that supports these destructive business practices. And we argue for a dramatic transformation in the governance of U.S. pharmaceutical companies.

Price Gouging

The news last September that pharmaceutical company Turing, led by a 32-year-old hedge-fund manager, had raised the price of a 62-year-old drug from \$13.50 to \$750.00 focused public attention on price gouging in an industry in which the pursuit of wealth has trumped the improvement of health.¹ The day after Democratic presidential candidate Hillary Clinton tweeted that this “price gouging” was “outrageous,” the NASDAQ Biotechnology Index plunged by 4.7%, or \$15 billion in market capitalization, in a few hours of trading. This reaction demonstrated the importance of the stock market to the fortunes that individuals can reap when pharmaceutical companies can keep drug prices high.²

The industry trade group Pharmaceutical Researchers and Manufacturers of America (PhRMA) was quick to disown Turing, tweeting that it did not “represent the values of PhRMA member companies.”³ Yet price gouging in the U.S. pharmaceutical drug industry goes back more than three decades. In 1985 U.S. Representative Henry Waxman, chair of the House Subcommittee on Health and the Environment, accused the pharmaceutical industry of “gouging the American public” with “outrageous” price increases, driven by “greed on a massive scale.”⁴

Despite many Congressional inquiries since the 1980s, including the recent case of Gilead Sciences’ extortionate pricing of the Hepatitis-C drug Sovaldi,⁵ the U.S. government does not regulate drug prices. UK Prescription Price Regulation Scheme data for 1996 through 2008 show that, while drug prices in other advanced nations were close to the UK’s regulated prices, those in the United States were between 74% and 152% higher.⁶ Médecins Sans Frontières (MSF) has produced abundant evidence that U.S. drug prices are by far the highest in the world.⁷

The U.S. pharmaceutical industry’s invariable response to demands for price regulation has been that it will kill innovation. U.S. drug companies claim that they need higher prices than those that prevail elsewhere so that the extra profits can be used to augment R&D spending. The result, they contend, is more drug innovation that benefits the United States and indeed the whole world.⁸

It is a compelling argument, until one looks at how major U.S. pharmaceutical companies actually use the profits that high drug prices generate. In the name of “maximizing shareholder value” (MSV), pharmaceutical companies allocate profits from high drug prices to massive repurchases, or buybacks, of their own corporate stock for the sole purpose of giving manipulative boosts to their stock prices. Incentivizing these buybacks is stock-based compensation that rewards senior executives for stock-price performance.⁹

The high prices that these pharmaceutical companies charge are, as we show below and in our companion submission to the High-Level Panel, destructive of innovation.¹⁰ An innovative enterprise seeks to develop a high-quality product that it can sell to the largest possible market at the most affordable price.¹¹ In sharp contrast, the MSV-obsessed companies that dominate the U.S. drug industry have become monopolies that restrict output and raise price.

In this contribution to the High-Level Panel on Access to Medicines, we document the massive spending by U.S. pharmaceutical companies on stock buybacks over the past decade. We show how, through stock-based pay, senior executives benefit from buybacks. As a prime example of the adverse influence of buybacks on drug prices, access to medicines, and medical innovation, we highlight Gilead Sciences, a company in which annual CEO compensation now tops \$200 million. We critique the “shareholder value” ideology that supports these destructive business practices. A cure to the crisis in access to medicines requires a dramatic transformation in the governance of U.S. pharmaceutical corporations.

Buyback Boosts

U.S. pharmaceutical companies claim that high drug prices fund investments in innovation. Yet the 19 drug companies in the S&P 500 Index in February 2015 and publicly listed from 2005 through 2014 distributed 97% of their profits to shareholders over the decade, 47% as buybacks and 50% as dividends (see Table 1).

Table 1. Stock buybacks and cash dividends, 2005-2014, at 19 U.S. pharmaceutical companies in the S&P 500 Index¹²

Company	REV, \$b	NI, \$b	BB, \$b	DV, \$b	R&D, \$b	BB/ NI%	DV/ NI%	(BB+DV)/ NI%	R&D/ REV%	BB/ R&D	Employees 2014
JOHNSON & JOHNSON	629.8	120.9	38.8	56.7	78.2	32	47	79	12	0.50	126,500
PFIZER	541.2	91.1	60.8	66.6	84.0	67	73	140	16	0.72	78,300
MERCK	347.7	63.3	26.5	41.3	66.5	42	65	107	19	0.40	70,000
ABBOTT LABORATORIES	283.6	40.5	9.0	24.1	30.4	22	59	82	11	0.30	26,000
ELI LILLY	203.9	30.5	3.7	20.3	43.3	12	67	79	21	0.09	39,135
BRISTOL-MYERS SQUIBB	186.5	35.9	4.6	23.0	36.1	13	64	77	19	0.13	25,000
AMGEN	157.8	41.5	34.7	4.9	34.5	84	12	95	22	1.01	17,900
GILEAD SCIENCES	83.8	29.3	17.0	0.0	14.4	58	0	58	17	1.18	7,000
ALLERGAN	53.7	6.5	4.1	0.6	8.6	62	9	71	16	0.47	21,600
BIOGEN IDEC	48.7	11.2	10.0	0.0	12.6	89	0	89	26	0.79	7,550
MYLAN	48.3	2.4	3.6	0.6	4.4	151	23	174	9	0.81	30,000
ACTAVIS	47.2	-1.5	0.6	0.0	4.0	-42	0	-42	8	0.16	21,600
HOSPIRA	36.9	2.1	0.6	0.0	2.6	29	0	29	7	0.23	19,000
CELGENE	35.9	6.7	10.4	0.0	11.7	155	0	155	33	0.89	6,012
PERRIGO	23.5	1.7	0.3	0.2	0.9	18	14	32	4	0.35	10,220
ENDO INTERNATIONAL	18.5	-0.4	0.8	0.0	1.5	-187	0	-187	8	0.53	5,062
REGENERON	8.1	0.7	0.0	0.0	4.9	0	0	0	61	0.00	2,925
ALEXION	7.0	1.4	0.4	0.0	1.7	27	0	27	24	0.23	2,273
VERTEX	5.7	-3.9	0.0	0.0	6.1	0	0	0	107	0.00	1,830
Totals, 19 pharma companies, 2005-2014	2,767.7	479.8	225.9	238.2	446.1	47	50	97	16	0.51	517,907
Totals, 459 S&P 500 companies 2005-2014	86,893.9	7,120.7	3,751.6	2,539.8	1,736.9	53	36	88	2	2.16	24,580,511
19 pharma as % of 459 S&P 500=4.14%	3.19%	6.74%	6.02%	9.38%	25.69%						2.11%

REV=revenues; NI=Net Income; BB=stock buybacks (aka repurchases); DV=cash dividends; R&D=research and development expenditures

Source: S&P Compustat database.

The total of \$226 billion spent on buybacks was equivalent to 51% of their combined R&D expenditures. That \$226 billion could have been returned to households in the form of lower drug prices without infringing on R&D spending, while providing ample dividends to

shareholders. Or it could have been allocated to the development of drugs for high-priority access areas that are otherwise underfunded and underserved.

In the United States, high levels of distributions to shareholders are not unique to pharmaceutical companies. From 2005 through 2014, 459 companies in the S&P 500 Index expended \$3.8 trillion on buybacks, representing 53% of net income, on top of paying \$2.6 trillion in dividends equaling 36% of net income. They held much of the remaining profits abroad, sheltered from U.S. taxation.¹³ Many of America's largest corporations, Pfizer and Merck among them, routinely distribute more than 100% of net income to shareholders, generating the extra cash by reducing reserves, selling off assets, taking on debt, or laying off employees.¹⁴ Over the decade 2005-2014, Johnson & Johnson, Pfizer, and Merck, the three largest pharma companies, spent an annual average of \$3.9 billion, \$6.1 billion, and \$2.6 billion, respectively, on buybacks, while Amgen, the largest independent biopharma company, spent \$3.5 billion per year.

The earnings that a company retains after distributions to shareholders are the financial foundation for investment in innovation. These retained earnings can fund investment in plant and equipment, research and development, and, of critical importance to innovation, training and retaining employees.¹⁵ Dividends are the traditional, and legitimate, way for a publicly listed corporation to provide income to shareholders. They receive dividends for *holding* shares. In contrast, by creating demand for the company's stock that boosts its price, buybacks reward existing shareholders for *selling* their shares.

The most prominent sharesellers are corporate executives, investment bankers, and hedge-fund managers who can time their stock sales to take advantage of buyback activity done as open-market repurchases. Buybacks also automatically increase earnings per share (EPS) by decreasing the number of shares outstanding. Since EPS has become a major metric by which financial interests evaluate a company's performance, buybacks tend to increase demand for a company's stock, thus creating opportunities for stock-market traders to sell their shares at a gain, even in the absence of increased corporate revenues or profits.¹⁶

Pumping Pay

Why do companies buy back their own shares? In his article, "Profits Without Prosperity: Stock Buybacks Manipulate the Market and Leave Most Americans Worse Off," Lazonick argues that the only logical explanation is that stock-based compensation gives senior executives personal incentives to do buybacks to boost stock prices.¹⁷ There are two main types of stock-based compensation: stock options, for which the realized gains depend on the difference between the stock price on the option exercise date and the stock price on the option grant date; and stock awards, for which the realized gains depend on the market price of the stock on the date that the award vests.¹⁸

By using stock buybacks to boost stock prices, executives can augment the gains that they realize from exercising options or vesting of awards. As shown in Table 2, from 2006 through 2014, the average annual total compensation of the 500 highest-paid U.S. executives (not including billion-dollar-plus outliers) ranged from \$14.4 million in 2009 to

\$30.3 million in 2012, with realized gains from the combination of exercising options and vesting of awards constituting from 66% to 82% of the total.¹⁹ Stock-based pay is designed to incentivize executives to increase the company's stock price and to reward them for doing so. Buybacks serve these purposes.

Table 2. 500 highest-paid executives, U.S. corporations, with the proportions of total direct compensation from stock options and stock awards, and representation of pharmaceutical executives among the top500, 2006-2014

	500 Highest-Paid Executives,				Highest-Paid Executives,				No. of pharma execs
	TDC, \$m	SO/ TDC%	SA/ TDC%	(SO+SA) / TDC%	TDC, \$m	SO/ TDC%	SA/ TDC%	(SO+SA) / TDC%	
2006	26.8	60	15	75	26.5	68	12	81	14
2007	30.0	59	20	78	22.7	61	20	81	11
2008	20.2	50	26	76	23.5	67	14	81	16
2009	14.4	40	26	66	19.1	43	23	66	27
2010	18.5	40	28	68	17.8	46	28	74	17
2011	19.5	41	33	74	18.0	52	22	74	12
2012	30.3	42	40	82	31.5	64	27	91	23
2013	26.2	46	35	81	35.9	66	26	91	32
2014	29.7	47	36	82	46.2	67	22	89	30

TDC=total direct compensation; SO=realized gains from exercising stock options; SA=realized gains from vesting of stock awards

Source: S&P's ExecuComp database

Pharma executives are well represented among the 500 highest-paid executives at U.S. corporations. In the most recent years, as their numbers among the top500 have increased, the average total compensation of the drug executives has soared, with the proportion of their pay derived from exercising stock options about 50% higher than the average for the top 500 as a whole in 2013 and 2014.

Table 3 shows that biopharma companies launched in the late 1980s and early 1990s account for the explosion in pharma executive pay. Table 4 digs deeper into these data by showing the six highest-paid pharma executives for each year from 2006 through 2014. Note the prominence, especially in the most recent years, of executives from four of the biopharma companies in Table 3: Gilead Sciences (14 of the 54 cells), Celgene (7), Regeneron (7), and Alexion (3).²⁰ Also note that almost all the compensation of the executives from these companies is stock-based. These are the executives that, in the name of "maximizing shareholder value," are setting new standards of greed in the U.S. pharmaceutical industry. Leading the way is Gilead Sciences CEO, John C. Martin, who appears on this top6 list in all nine years, three times in first place, four times in second, and twice in third.

Table 3. Biopharma companies leading the explosion of executive pay, 2012, 2013, and, 2014

Company (year founded)	Number of executives in top500					
	2012		2013		2014	
	No. of executives	Average TDC, \$m	No. of executives	Average TDC, \$m	No. of executives	Average TDC, \$m
GILEAD SCIENCES (1987)	3	41.6	4	74.7	5	82.4
REGENERON (1988)	5	50.7	4	53.0	4	56.6
ALEXION (1992)	4	21.6	4	20.8	2	111.4
CELGENE (1986)	0		3	27.5	1	96.3
VERTEX (1989)	0		1	30.9	0	
Executives, 5 pharma	12	38.7	16	44.2	12	79.8
Executives, 19 pharma	23	31.5	32	35.9	30	46.2
All executives on 500	500	30.3	500	26.2	500	29.7

Source: S&P's ExecuComp database

Table 4. Six highest compensated pharma executives, 2006-2014, with total compensation in millions of dollars (stock-based pay as % of total compensation)

	#1	#2	#3	#4	#5	#6
2006	John W. Jackson CELGENE \$84.5m. (96%)	Sol J. Barer CELGENE \$46.1m. (94%)	John C. Martin GILEAD SCIENCES \$32.5m. (93%)	Robert A. Essner WYETH \$29.6m. (84%)	Fred Hassan SCHERING-PLOUGH \$25.4m. (41%)	N. W. Bischofberger GILEAD SCIENCES \$24.7m. (95%)
2007	Miles D. White ABBOTT LABS \$44.8m. (85%)	John C. Martin GILEAD SCIENCES \$35.6m. (93%)	Richard A. Gonzalez ABBOTT LABS \$29.4m. (91%)	Henri A. Termeer GENZYME \$24.7m. (85%)	N. W. Bischofberger GILEAD SCIENCES \$24.1m. (95%)	William C. Weldon J & J \$18.7m. (7%)
2008	Robert J. Hugin CELGENE \$74.6m. (97%)	Sol J. Barer CELGENE \$59.3m. (94%)	John C. Martin GILEAD SCIENCES \$33.1m. (86%)	Miles D. White ABBOTT LABS \$27.1m. (52%)	James C. Mullen BIOGEN \$24.9m. (72%)	N. W. Bischofberger GILEAD SCIENCES \$22.8m. (92%)
2009	Fred Hassan MERCK \$89.8m. (63%)	John C. Martin GILEAD SCIENCES \$59.2m. (96%)	Robert J. Bertolini MERCK \$39.6m. (25%)	Carrie Smith Cox MERCK \$36.1m. (51%)	Thomas P. Koestler MERCK \$30.9m. (58%)	Sol J. Barer CELGENE \$30.4m. (90%)
2010	John C. Martin GILEAD SCIENCES \$42.7m. (91%)	David E. I. Pyott ALLERGAN \$33.8m. (91%)	James C. Mullen BIOGEN \$24.6m. (93%)	C. B. Begley HOSPIRA \$23.1m. (90%)	William C. Weldon J & J \$19.9m. (21%)	Frank Baldino, Jr. CEPHALON \$18.2m. (81%)
2011	John C. Martin GILEAD SCIENCES \$43.2m. (90%)	David E. I. Pyott ALLERGAN \$33.8m. (91%)	William C. Weldon J & J \$24.4m. (32%)	Miles D. White ABBOTT LABS \$17.2m. (59%)	John C. Lechleiter ELI LILLY \$15.6m. (73%)	Leonard Bell ALEXION \$13.3m (71%)
2012	G. D. Yancopoulos REGENERON \$129.0m. (96%)	John C. Martin GILEAD SCIENCES \$84.0m. (95%)	Leonard S. Schleifer REGENERON \$51.5m. (92%)	Robert J. Coury MYLAN \$51.3m. (93%)	Leonard Bell ALEXION \$40.5m (99%)	Neil Stahl REGENERON \$73.5m. (96%)
2013	John C. Martin GILEAD SCIENCES \$168.9m. (97%)	Paul M. Bisaro ALLERGAN \$113.2m. (95%)	John F. Milligan GILEAD SCIENCES \$79.7m. (97%)	G. D. Yancopoulos REGENERON \$74.5m. (96%)	Leonard S. Schleifer REGENERON \$73.5m. (96%)	Robert J. Hugin CELGENE \$46.4m. (81%)
2014	Leonard Bell ALEXION \$195.8m (98%)	John C. Martin GILEAD SCIENCES \$192.8m. (97%)	Leonard S. Schleifer REGENERON \$101.8m. (97%)	Robert J. Hugin CELGENE \$96.3m. (89%)	John F. Milligan GILEAD SCIENCES \$89.5m. (97%)	G. D. Yancopoulos REGENERON \$61.9m. (96%)

Gilead's Greed

Over the past two years Gilead Sciences has set the gold standard for price-gouging by drug companies with its \$84,000 Sovaldi and \$94,500 Harvoni treatments for the Hepatitis-C Virus (HCV). Prior to 2014, Gilead had two blockbuster drugs, with Truvada, launched in 2004, reaching \$3.2 billion in sales in 2012, and Atripla, launched in 2006, generating a high of \$3.6 billion in 2013. In their first full years on the market, Sovaldi had sales of \$10.3 billion in 2014 and Harvoni \$13.9 billion in 2015. As a result, as shown in Table 5, Gilead's revenues and profits exploded in these two years.

Table 5. Gilead Sciences, operating data and distributions to shareholders, 2006-2015

Fiscal year	REV \$m	NI \$m	BB \$m	DV \$m	R&D \$m	NI/REV %	BB/Ni %	DV/NI %	BB/R&D	R&D/REV %	REV/EMP \$m	EMP
2006	3,026	-1,190	545	0	2,778	-39.3	-46	0	0.2	92	1.2	2,515
2007	4,230	1,615	488	0	591	38.2	30	0	0.8	14	1.4	2,979
2008	5,336	2,011	1,970	0	733	37.7	98	0	2.7	14	1.6	3,441
2009	7,011	2,636	998	0	940	37.6	38	0	1.1	13	1.8	3,852
2010	7,949	2,901	4,023	0	1,073	36.5	139	0	3.7	13	2.0	4,000
2011	8,385	2,804	2,383	0	1,229	33.4	85	0	1.9	15	1.9	4,500
2012	9,703	2,592	667	0	1,760	26.7	26	0	0.4	18	1.9	5,000
2013	11,202	3,075	582	0	2,120	27.4	19	0	0.3	19	1.8	6,100
2014	24,890	12,101	5,349	0	2,854	48.6	44	0	1.9	11	3.6	7,000
2015	32,639	18,108	10,000	1,900	2,845	55.5	55	10	3.5	9	4.4	7,500
2006-2015	114,371	46,653	27,005	1,900	16,922	40.8	58	4	1.6	15		

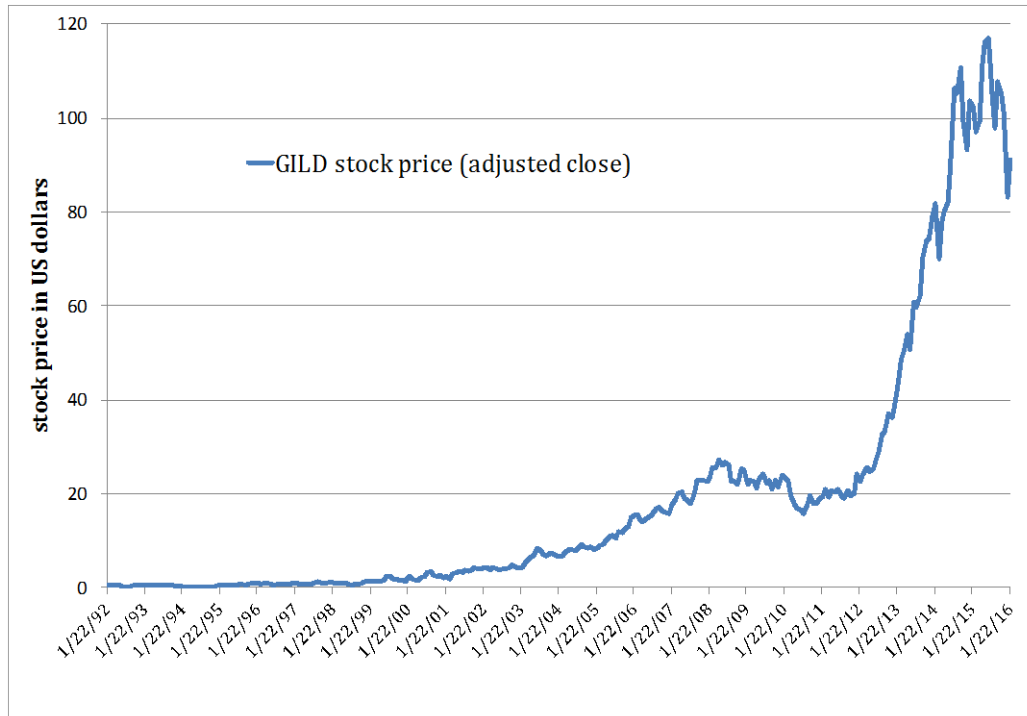
REV=revenues; NI=net income; BB=stock buybacks; DV=cash dividends; R&D=research and development expenditures; EMP=employees

Source: S&P's Compustat database

Once Gilead moved into sustained profitability in 2007, it had very high profit margins (NI/REV%), but these too have soared with its most recent blockbusters, as have sales per employee (REV/EMP\$m). Pre-Sovaldi/Harvoni, Gilead was already doing substantial buybacks, but these reached massive levels in 2014 and 2015. The result, as the Sovaldi/Harvoni pricing strategy intended, was an exploding stock price from June 2012 (see Figure 1), about six months after its \$11.2 billion acquisition of Pharmasset, which had substantially developed sofosbuvir (Sovaldi).

An 18-month Congressional inquiry by U.S. Senators Ron Wyden (D-OR) and Charles E. Grassley (R-IA) probed the rationale for Gilead's Sovaldi pricing strategy, and, in a report issued on December 1, 2015, concluded that "a key consideration in Gilead's decision-making process to determine the ultimate price of Sovaldi was setting the price such that it would not only maximize revenue, but also prepare the market for Harvoni and its even higher price."²¹ But the Wyden-Grassley report made no attempt to probe the influence and impact of Gilead's pricing strategy on its stock price and executive pay. In our view, the objective of Gilead's executives in setting high prices was not to maximize revenues but rather to "maximize shareholder value" so that soaring stock prices would translate into enormous executive pay packages. Indeed, it appears that MSV provides the prime motivation for every decision that Gilead's senior executives make, with the company's stock price and their own stock-based pay as the measures of success.

Figure 1. Gilead Sciences (GILD: NASDAQ) stock price (monthly adjusted close), January 1992-February 2016



Source: Yahoo Finance, monthly data

The greed of Gilead's top executives, sanctioned by MSV ideology, is preventing millions of people with HCV in the United States and abroad from accessing Solvaldi/Harvoni at an affordable cost.²² The business model that would lead to such an outcome, would be one in which the gains from innovative medicines were shared by households in their capacities as taxpayers who fund the government agencies that support the drug companies, workers whose skills and efforts have developed the drugs, and consumers who have illnesses waiting to be cured or relieved. In contrast, the MSV business model concentrates the gains from innovative medicines in the hands of senior corporate executives who pad their paychecks by doing billions of dollars of stock buybacks to manipulate the company's stock price.

In the process, for millions who cannot afford access to innovative medicines, the life sciences become death sciences. In a hard-hitting article entitled "Gilead's greed that kills," economist Jeffrey Sachs makes this case:²³

Gilead Sciences is an American pharmaceutical company driven by unquenchable greed. The company is causing hundreds of thousands of Americans with Hepatitis C to suffer unnecessarily and many of them to die as the result of its monopolistic practices, while public health programs face bankruptcy. Gilead CEO John C. Martin took home a reported \$19 million last year in compensation – the spoils of untrammelled greed.

Professor Sachs rightly views the 2014 compensation of Gilead CEO Martin as a measure of greed that is both unquenchable and untrammled. A glance at Table 4 above reveals, however, that Martin's actual compensation in 2014 was \$192.8 million. As Hopkins and Lazonick explain in a forthcoming paper, the "reported \$19 million" that Sachs cites is a "fair value" measure of executive compensation that, as can be seen, vastly understates actual compensation.²⁴ For the decade 2005-2014, the "fair value" measure of Martin's pay totaled \$141.5 million but his actual pay, reported to the U.S. Internal Revenue Service, was \$717.4 million, of which 95% was stock-based.

In 2014 the actual pay packages of the other four Gilead executives named on the company's proxy statement were: John F. Milligan \$89.5 million (97% stock-based); Gregg H. Alton \$56.2 million (97%); Norbert W. Bischofberger \$50.7 million (96%); and Robin L. Washington \$26.6 million (93%). We estimate that in 2015 the compensation of Martin was \$210 million, Milligan \$143 million, Bischofberger \$81 million, Alton \$22 million, and Washington \$11 million. In the first two months of 2016, even with Gilead's stock price in decline, CEO Martin has already "earned" \$14.8 million exercising his stock options. We can be sure that Martin is using Gilead's cash to do massive buybacks to "create value" for sharesellers like himself and his senior collaborators.²⁵

In a radio interview in December 2013, Alton, vice-president of corporate and medical affairs, defended the price of Sovaldi by saying: "Really you need to look at the big picture. Those who are bold and go out and innovate like this and take that risk, there needs to be more of a reward on that. Otherwise it would be very difficult for people to make that investment."²⁶ But whose risks are being rewarded? Over its entire corporate history, Gilead has secured a total of \$376 million from public share issues, all between 1991, when it did its IPO, and 1996. Especially since Gilead did not start paying dividends until 2015, it is probable that virtually all of those shareholders have long since sold their shares to secure capital gains. Current shareholders are just stock-market traders who have bought outstanding shares. So why are Gilead's senior executives so intent on "creating value" for shareholders who have contributed nothing to the development of Gilead's products? The executive pay numbers provide a more than ample answer.

As a drug company, Gilead is not particularly innovative. Among the ten drugs that have generated 97% of Gilead's revenues since 1999, only two contain ingredients that were fully developed by Gilead researchers. Gilead gained control over the remaining ingredients, including sofosbuvir, the key component of Sovaldi and Harvoni, through acquisitions of companies that had brought the drugs to the later stages of development or had already put them on the market. And tracing the history of the design and development of the drugs that Gilead sells, one invariably finds some seminal research that was done with government funding. From 1938 through 2015, the U.S. National Institutes of Health (NIH) spent \$958 billion in 2015 dollars on life-sciences research.

Indeed, the NIH's 2016 budget of \$32.3 billion is, in real terms, triple NIH's annual spending in the mid-1980s.²⁷ Yet even three decades ago, before companies like Celgene, Gilead, Cephalon, Regeneron, Vertex, and Alexion had been founded, NIH funding was critical to drug innovation. At a meeting with French President François Mitterrand in Silicon Valley

in 1984, documented in a *Washington Post* report, venture capitalist Thomas Perkins, whose firm had led in bringing Genentech from startup in 1976 to IPO in 1980, “extolled the virtues of the risk-taking investors who finance the entrepreneurs.” The *Post* article goes on to say:

Perkins was cut off by Stanford University Professor Paul Berg, who won a Nobel Prize for work in genetic engineering. “Where were you guys in the ’50s and ’60s when all the funding had to be done in the basic science? Most of the discoveries that fueled [the industry] were created back then....I cannot imagine that if there had not been an NIH funding research, that there would have been a biotechnology industry,” Berg said.

As these things go, Berg himself would be appointed to Gilead’s board in 1998, and as a company director from 2004 to 2011 regularly exercised his stock options, netting an average of \$2.9 million per year.²⁸ But the acute problem of access to medicines goes far beyond the actions of individuals or even companies. The Gilead problem is an American problem, and given the centrality of U.S. pharmaceutical research, the American problem is a global problem. The key cause of high drug prices, restricted access to medicines, and stifled innovation, we submit, is a social disease called “maximizing shareholder value.” This disease can be eradicated.²⁹ In a companion submission to the High-Level Panel, we explain how to fix U.S. pharma’s broken business model.³⁰

Notes:

- ¹ Andrew Pollack, "Drug goes from \$13.50 a tablet to \$750, overnight," [New York Times](#), September 20, 2015.
- ² Robert Langreth and Drew Armstrong, "Clinton's tweet on high drug prices sends biotech stocks down," [BloombergBusiness](#), September 21, 2015.
- ³ Ariana Eunjung Cha, "Drug and biotech industry trade groups give Martin Shkreli the boot," [Washington Post](#), September 24, 2015.
- ⁴ Sari Horowitz, "Drug industry accused of gouging public," [Washington Post](#), July 16, 1985.
- ⁵ United States Senate Committee on Finance, "Wyden-Grassley Sovaldi investigation finds revenue-driven pricing strategy behind \$84,000 hepatitis drug," [Press release](#), December 1, 2015.
- ⁶ UK Department of Health, *The Pharmaceutical Price Regulation Scheme*, Report to Parliament, various years 1996-2008. See also Hagop Kantarjian and S. Vincent Rajkumar, "Why Are Cancer Drugs So Expensive in the United States, and What Are the Solutions?" [Mayo Clinic Proceedings](#), April 2015: 500-504.
- ⁷ Médecins Sans Frontières, "The Cost of Medicine: A Special Report," [Alert](#), Fall, 2015.
- ⁸ See, for example, Robert Kravitz, "Prescription drug industry accused of price gouging," [The Record](#), July 16, 1985; M. G. Horowitz, "Interview with Rep. Henry A. Waxman, Chairman, Subcommittee on Health and the Environment, U.S. House of Representatives," [HealthWeek](#), September 28, 1987; Andrew Pollack, "The troubling cost of drugs that offer hope," [New York Times](#), February 9, 1988; Julie Rovner, "Should the government regulate prescription drug prices," [CQ Researcher](#), July 17, 1992; Warren E. Leary, "U.S. gives up right to control drug prices," [New York Times](#), April 12, 1995; Gerald J. Mossinghoff, "Overview of the Hatch-Waxman Act and Its Impact on the Drug Development Process," [Food and Drug Law Journal](#), 54. 1999: 187-194; Arthur A. Levin, "Myth of the High Cost of Drug Research," [Center for Medical Consumers](#), August 1, 2001. For a current discussion of these arguments, see Amy Nordrum, "Why are prescription drugs so expensive? Big Pharma points to the cost of research and development, Critics say that's no excuse," [International Business Times](#), September 19, 2015.
- ⁹ William Lazonick, "Taking Stock: Why Executive Pay Results in an Unstable and Inequitable Economy," [Roosevelt Institute](#) White Paper, June 5, 2014; William Lazonick, "Profits Without Prosperity: Stock Buybacks Manipulate the Market and Leave Most Americans Worse Off," [Harvard Business Review](#), September 2014, 46-55; William Lazonick, "Stock Buybacks: From Retain-and-Reinvest to Downsize-and-Distribute," Center for Effective Public Management, [Brookings Institution](#), April 2015.
- ¹⁰ William Lazonick, Matt Hopkins, Ken Jacobson, Mustafa Erdem Sakinç, and Öner Tulum, "U.S. Pharma's Business Model: Why It Is Broken and How It Can Be Fixed," The Academic-Industry Research Network submission to the UN Secretary General's High-Level Panel on Access to Medicines, February 28, 2016.
- ¹¹ William Lazonick, "The Theory of Innovative Enterprise: Foundation of Economic Analysis," [AIR Working Paper](#), August 2015.
- ¹² Notes on companies in Table 1: a) The pharmaceutical business of Abbott Laboratories became AbbVie on January 1, 2013. b) In June 2015 Actavis, Plc, domiciled in Ireland, acquired Allergan, and changed the merged company's name to Allergan, Plc. c) In November 2012, U.S. company Watson Pharmaceuticals acquired the Swiss company Actavis, taking its name. d) In October 2013, Actavis acquired the Irish company Warner Chilcott and changed the merged company's name to Actavis, Plc, headquartered in Ireland. e) In September 2015, Pfizer acquired Hospira. f) In February 2014, Endo acquired the Canadian firm Paladin Labs, established global headquarters in Ireland, and was renamed Endo International, Plc.
- ¹³ Richard Rubin, "\$2.1 trillion overseas to avoid taxes," [BloombergBusiness](#), March 4, 2015.
- ¹⁴ See e.g. William Lazonick, Matt Hopkins, and Öner Tulum, "Tax dodging just one part of Pfizer's corrupt business model," [Huffington Post](#), December 4, 2015.
- ¹⁵ Lazonick, "The Theory of Innovative Enterprise."
- ¹⁶ William Lazonick, "Buybacks: From Basics to Politics," AIR Special Report, [The Academic-Industry Research Network](#), August 19, 2015.
- ¹⁷ Lazonick, "Profits Without Prosperity."
- ¹⁸ See Matt Hopkins and William Lazonick, "The Mismeasure of Mammon: The Uses and Abuses of the ExecuComp Database," Report on Executive Pay to the Institute of New Economic Thinking, March 2016 (forthcoming).

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- ¹⁹ We begin the series in 2006 because of changes in the availability of relevant executive pay data in that year. See *ibid.*
- ²⁰ Among executives from companies founded in the late 1980s or early 1990s, Table 4 also includes one executive from Cephalon, which was founded in 1987 in Pennsylvania and acquired by the Israeli company Teva in May 2011.
- ²¹ The Staffs of Senators Ron Wyden and Charles E. Grassley, “The Price of Sovaldi and Its Impact in the U.S. Health Care System,” [Committee on Finance](#), United States Senate, December 1, 2015, p. 117.
- ²² In March 2014, Gilead granted Egypt the price of \$900 for a 12-week treatment of Sovaldi. Maggie Fick and Ben Hirschler, “Gilead offers Egypt new hepatitis C drug at 99 percent discount,” [Reuters](#), March 21, 2014. One suspects that the pricing concession to Egypt was a condition of the deal that Pharmasset founder Raymond Schinazi, who was originally from Egypt, made with Gilead in the 2011 sale of Pharmasset. See Clive Cookson, “Raymond Schinazi fled Nasser’s Egypt to become a pioneer in antivirals,” [Financial Times](#), July 27, 2014. Under Congressional scrutiny and with revenues rolling in, Gilead extended that price to other low-income nations. As of August 2015, Gilead had made a 12-week treatment of Sovaldi available in [101](#) countries for \$900.
- ²³ Jeffrey Sachs, “Gilead’s greed that kills,” [Huffington Post](#), July 27, 2015.
- ²⁴ Hopkins and Lazonick, “The Mismeasure of Mammon.”
- ²⁵ Gilead will report 2015 executive pay for the CEO, CFO, and three other highest-paid executives in its proxy statement that will be published in March. Note that the Securities and Exchange Commission does not require that companies reveal, at the time or after the fact, the precise days on which they do open-market repurchases. Monthly buybacks are reported in 10-Q filings with the Securities and Exchange Commission.
- ²⁶ Wyden-Grassley, “The Price of Sovaldi,” p. 105.
- ²⁷ National Institute of Health, [Budget](#).
- ²⁸ Insider trade data, filed on SEC Form 4, show that between 2004 and 2011, when he retired from Gilead’s board, Berg’s realized gains from exercising stock options were \$23.1 million.
- ²⁹ Lazonick, “Profits Without Prosperity”; William Lazonick, “Comments on the draft of the 2014-2015 revision of the OECD Principles of Corporate Governance,” [OECD public consultation website](#), January 4, 2015; William Lazonick, “Labor in the Twenty-First Century: The Top 0.1% and the Disappearing Middle Class,” in Christian E. Weller, ed., *Inequality, Uncertainty, and Opportunity: The Varied and Growing Role of Finance in Labor Relations*, Cornell University Press, 2015: 143-192.
- ³⁰ William Lazonick, et al., “U.S. Pharma’s Business Model.”