

**The Economic Impact of a Windfall Profits Tax  
For Savers and Shareholders**

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***S O N E C O N***

# The Economic Impact of a Windfall Profits Tax for Savers and Shareholders<sup>1</sup>

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Until recently and for nearly a generation, oil and its refined products have been available to American businesses and families at historically low prices. The price of a barrel of crude oil, adjusted for inflation and expressed in 2005 dollars, has averaged about \$30 since 1946.<sup>2</sup> While the real price of oil jumped to an average of over \$57 per barrel from 1974 to 1985, the strongest years for the OPEC cartel, from 1986 to 2003 prices averaged less than \$26 per barrel. Over the last two years, inflation-adjusted oil prices have risen again, averaging about \$45 per barrel since January 2004 and \$55 per-barrel this year.<sup>3</sup>

When prices rise, most people's memories are short; and the recent price increases have prompted proposals to revive a "Windfall Profits Tax" (WPT) on integrated oil companies. We have examined and analyzed the leading proposal, the "Windfall Profits Rebate Act of 2005" (S 1631), and found that such a measure would produce two troubling unintended consequences. An additional 50 percent tax on U.S. domestic producers for selling oil at the world price, applied to revenues that exceed \$40 per barrel, would discourage domestic oil production and increase U.S. dependence on imports from the Persian Gulf. In addition, such a tax would impose an economic burden on American savers and retirees, whose pension plans and retirement accounts typically include significant investments, direct or indirect, in oil company shares. By reducing both the market value of those shares and the dividends they pay, a windfall profits tax would affect the value of most people's retirement savings.

We estimate that enactment of such a windfall profit tax would generate between \$18 billion and \$104 billion in gross revenues between 2006 and 2010, based on five years of oil prices at \$45, \$50, \$55 and \$60 per barrel. However, because these tax payments would be deductible under the corporate income tax, the net, five-year revenues would be less than half those levels, ranging from \$8.6 billion to \$48.6 billion. We further estimate that the tax would reduce the market value and dividends of U.S. oil companies, calculated from what they would be with oil prices at \$45, \$50, \$55 and \$60 per barrel. This "opportunity cost" for shareholders from the application of a windfall profits tax ranges from an average of \$21.3 billion per year to \$121.8 billion per year, depending on oil prices and inflation. The higher oil prices that trigger the windfall profit tax would also increase earnings and consequently the sector's market capitalization. Adjusting the market capitalization for all of these effects, we estimate that the windfall profits tax will

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<sup>1</sup> This study was supported by a grant from the Investors Action Foundation.

<sup>2</sup> See, for example, [www.inflationdata.com/inflation/Inflation\\_Rate/Historical\\_Oil\\_Prices\\_Chart.asp](http://www.inflationdata.com/inflation/Inflation_Rate/Historical_Oil_Prices_Chart.asp).

<sup>3</sup> *Ibid.*

reduce that higher market capitalization by between 2.7 percent and 10.9 percent, depending on future world oil prices.<sup>4</sup>

These costs would be borne by all oil company shareholders, many of whom hold oil stocks through pension funds or other retirement accounts. Today, Americans maintain some 175 million private and public pension or retirement saving accounts, with an average value of \$66,000 per account. These accounts currently hold about \$267 billion in corporate equities in U.S. domestic oil and gas companies, or 41 percent of their shares. While higher oil prices and earnings will increase the value of those holdings, a windfall profits tax would reduce the value and dividends of these pension and retirement saving holdings – their opportunity cost -- by an average of \$8.7 billion to \$50 billion per year (again, depending on oil prices), or between \$50 and \$287 per account, per year. For certain pension accounts that are both larger than average and heavily invested in equities and the oil sector, the cost may be much higher: The opportunity costs for state public employee pension funds could reach \$886 per account, per year.

### **The Economic Argument: Pros and Cons**

The proponents of an additional excise tax on revenue “windfalls,” arising from the profits generated by world energy prices markets, claim that such a tax would not distort economic decisions or markets, because the profits to be taxed are both abnormally high and unanticipated. By this reasoning, when a company’s profits are unusually high, government can tax those higher profits without reducing the resources needed to finance ordinary expenses and investment, and consequently without constraining a company’s ability to generate normal rates of return. It is further claimed that taxing unanticipated profits will not distort investment and production decisions, because unanticipated profits can not be a factor in the company’s decisions and investments. Based on this reasoning, a tax on windfall profits seems to provide a unique way of raising substantial revenues without distorting economic efficiency.

These claims cannot be substantiated. First, rising oil prices cannot be said to be truly unanticipated in economic terms. As documented above, oil prices historically have been subject to long-term increases and declines based on market conditions and political events: Adjusted for inflation, current oil prices are about one-third less than those immediately following the 1973 OPEC increase, roughly equivalent to those of the mid-1980s, almost twice those of the late 1980s, and three times those of the mid to late 1990s. The companies that produce oil, therefore, generally anticipate such long-term increases and declines in their investment decisions, even as they cannot know the timing of most price movements. At a minimum, their investment decisions anticipate that there will be both lean years and boom years, with the latter financing the business during the former. In this sense, today’s higher prices and profits have been propositionally

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<sup>4</sup> As we explain below, the current market capitalization of U.S. integrated oil and gas producers is approximately \$650 billion. Based on the historical price-earning ratio for the sector, five years of oil priced at \$45, \$50, \$55 and \$60 per barrel would increase that market capitalization in 2010 to, respectively, \$794 billion, \$909 billion, \$995 billion and \$1,120 billion.

anticipated, much like a form of deferred return or compensation whose precise future value is unknown. Since these profits are not truly unanticipated, an additional excise tax would have distorting effects. By reducing profits for the boom years and therefore the long-term return on domestic investment by the oil-producing companies, the additional tax should be expected to slow domestic investment and produce a smaller domestic energy-producing sector. That is precisely what happened in the 1980s after passage of the last windfall profits tax.

The case for such a tax also misapprehends the economic character and significance of abnormal profits or returns. In economics, an abnormal profit or return is essentially an accounting concept based on deviation from normal profits and returns. In economics, a “normal” profit is generally defined as the product of the risk-free interest rate and the book value of a firm’s operating assets<sup>5</sup> or, alternatively, the expected rate of return embodied in the original purchase price of assets.<sup>6</sup> These concepts are descriptive and do not assume that profits which substantially deviate from the standard are not needed to cover ordinary expenses and investment.

Furthermore, profits and rates of return which deviate from the averages are both a common and essential aspect of a modern market economy. For example, a prospect of economically abnormal profits is essential to the viability of sectors that depend on intellectual property: Patents and copyrights create monopoly rights which can produce monopoly rents which, by definition, are abnormal profits. The above-average profits and rates of return associated with many companies holding valuable intellectual property are accepted as necessary to stimulate innovations that benefit everyone, both directly and through their spillover effects. Researchers also have found evidence of abnormal profits earned by investors who took over assets of bankrupt thrifts in the late 1980s and early 1990s and converted them to equity ownership,<sup>7</sup> as well as early investors in IPOs in the late 1990s. These abnormal profits are subject to normal tax liability, but no additional excise tax.

Producers of non-oil commodities such as agricultural goods and minerals also often post abnormal profits (or losses), based on large price swings arising from changes in the supply and/or demand for the commodity. Public policy does not attach additional tax liability to those profits, recognizing that they reflect changing market conditions and help ensure the steady production of the commodities when prices fall. Large swings in profits and returns also are a regular feature of most forms of private investment. Personal and professional investors and funds that significantly “beat the market” earn returns that are “abnormal” from an economic perspective. Similarly, people who sell their homes at a time when the housing market is booming capture abnormal profits, relative to those generated during non-boom markets. In none of these cases does public

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<sup>5</sup> Gerald Feltham and James Ohlson, “Valuation and Clean Surplus Accounting for Operating and Financial Activities,” *Contemporary Accounting Research*, Volume 11, pp. 689-732, 1995.

<sup>6</sup> Eli Amir, Michael Kirschenheiter and Kristen Willard, “Firm Valuation with Deferred Taxes: A Theoretical Framework, Working Paper Series, University of London, July, 1997.

<sup>7</sup> Daniel Page, Gene Pettigrew, John Jahera and James Barth, “Thrift Conversions and Windfall profits: An Empirical Examination,” *The Journal of Real Estate Finance and Economics*, Vol. 18, Issue 3, May 1999.

policy apply an additional excise tax to capture the difference between those profits and those which would have been generated under less favorable market conditions. Virtually the only circumstances under which large penalties are applied to abnormal profits are instances of insider trading. In such cases, however, those penalties are incurred because the abnormal profits arise from acts which distort market prices, not from prices arising from normal market activity.<sup>8</sup>

The additional profits associated with rising world oil prices are comparable to those earned not by insider traders, but by other commodity producers, investors and homeowners when market conditions sharply increase those commodity, equity or housing prices. The recent run-up in oil prices occurred because strong economic growth in large economies, principally the United States, China and India, has increased energy demand at a time when both production problems in Venezuela, Nigeria, Iraq and the Gulf of Mexico have constrained the capacity to increase supplies and Persian Gulf producers have refused to significantly expand their production. Moreover, an additional excise tax on the price effects of these conditions will not ease any of those conditions. Since oil prices are determined by world markets and production decisions by OPEC – not by U.S. producers or the taxes they bear – an additional excise tax would neither increase production nor reduce demand. To the extent that the additional tax reduces the resources for additional investment in domestic oil production, it could help drive prices higher by constraining the long-term supply of domestically-produced oil.

### **The Windfall Profits Tax of 1980: Revenues and Production Effects**

The record of the Crude Oil Windfall Profit Tax Act of 1980, which applied a special tax on U.S. oil producers from 1980 to 1988, provides a guide for measuring the likely impact of a similar tax today. As with current proposals, the 1980 Act applied a new excise tax to the difference between the world market price of oil and a 1979 base price, adjusted annually for inflation. The 1980 Act generated less than \$40 billion in net revenues from 1980 to 1988, a fraction of the original projection of \$279 billion (Table 1, below).<sup>9</sup> Several factors explain this result. First, windfall profit taxes paid were deductible under the corporate income tax, reducing the additional revenues collected from oil companies by about half. Second, the new tax reduced U.S. domestic oil production by an estimated 3 percent to 6 percent, further reducing the foregone revenues as well as increasing U.S. oil imports by 8 percent to 16 percent.<sup>10</sup> The tax also generated much less revenue than originally projected, because oil prices in 1981-1988 were significantly lower than projected in 1980.

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<sup>8</sup> Jesse Fried, “Reducing the Profitability of Corporate Insider Trading with Pretrading Disclosure,” Working Paper Series, University of California, Berkeley School of Law, November 21, 1996. Researchers have also found patterns of institutions earning abnormal profits by purchasing within five days of analysts shifting to buy or strong buy recommendations. See Paul J. Irvine, Mark Lipson and Andy Puckett, “Tipping,” paper presented at AFA 2005 Philadelphia Meetings, September 2004.

<sup>9</sup> Salvatori Lazzari, “The Windfall Profits Tax on Crude Oil: An Overview of the Issues,” Congressional Research Service Report for Congress, 90-44 E, September 12, 1990.

<sup>10</sup> *Ibid.* The magnitude by which the windfall profit tax reduces domestic oil supplies and increases imports depends on the size of the shift in the marginal cost and the price elasticity of the supply curve.

**Table 1: Revenue Impact of 1980 Windfall Profit Tax Act, 1980-1988, \$ Millions<sup>11</sup>**

	<b>Projected Tax Revenues</b>	<b>Actual Gross Tax Revenues</b>	<b>Gross Tax Revenue as % of Projections</b>	<b>Foregone Income Tax Payments</b>	<b>Net Tax Revenues</b>
<b>1980</b>	5,159	3,052	59.2	945	1,615
<b>1981</b>	20,955	16,931	80.8	6,019	9,143
<b>1982</b>	30,973	22,036	64.7	9,250	10,814
<b>1983</b>	33,472	15,660	46.8	6,576	7,356
<b>1984</b>	35,332	8,120	23.0	3,100	3,836
<b>1985</b>	36,852	5,073	13.8	1,931	2,341
<b>1986</b>	37,446	8,866	23.7	3,432	4,513
<b>1987</b>	38,652	15	0.03	6	7
<b>1988</b>	10,181	128	1.3	--	--
<b>Total</b>	<b>\$279,022</b>	<b>\$79,881</b>	<b>\$28.6</b>	<b>\$31,259</b>	<b>\$39,625</b>

### **Economic Effects of the Windfall Profits Rebate Act of 2005**

The Windfall Profits Rebate Act of 2005 would impose a temporary, additional excise tax on U.S. integrated oil producers equal to 50 percent of the difference between the market or “removal” price of a barrel of taxable crude oil and a “base price” of \$40, annually adjusted for inflation. As with the 1980 version, windfall profits tax payments would be deductible from corporate income taxes. Also, revenues spent on certain “qualified investments” would be exempt from the tax. In addition, the legislation directs that revenues from the new tax be rebated to American consumers or used for other purposes.

The impact of the proposed tax on integrated oil and gas producers and their stockholders would clearly be negative. As with the 1980s Act, this proposal would be expected to reduce future production. Corporate earnings would be reduced by the net new taxes paid plus the foregone earnings from the reduction in production. For stockholders, the lower earnings translate into lower dividend payouts and lower stock prices – relative to their levels without the tax -- which comprise the opportunity costs to shareholders.

The following table (Table 2, below) summarizes our estimates of these effects under four scenarios for market prices for oil over five years. Each scenario assesses a \$5 increment from the 2006 base price of \$40 per barrel, up to the current price in futures market for 2006 of \$60 per barrel: \$45 per barrel, \$50 per barrel, \$55 per barrel and \$60 per barrel. Based on these prices and a reduction in production comparable to the 1980 tax, we estimate that the tax will potentially generate between \$18 billion and \$104 billion in gross excise taxes over five years (2006-2010). However, taking account of the deductibility of the tax under the corporate income tax, we estimate that the proposal would generate net revenues over five years of \$8.6 billion to \$48.6 billion.

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<sup>11</sup> *Ibid.*

The cost of the tax for shareholders is the sum of the foregone market capitalization and the foregone dividends. We derive estimates of the foregone market capitalization by multiplying the foregone profits (the difference between profits under the current tax system and under the windfall profit tax regime) by an average five-year price-earning ratio of 11. We estimate the foregone dividends from the foregone windfall profits based on the historic 30 percent average dividend payout by oil producers. The consequent costs for shareholders range from an average of \$21.3 billion to \$121.9 billion a year over five years (depending on the market price of oil).

**Table 2: Economic Impact of Windfall Profits Rebate Act of 2005 (\$ million)**

	Oil = \$45/barrel		Oil = \$50/barrel		Oil = \$55/barrel		Oil = \$60/barrel	
	Net Revenue	Costs for Stock-holders						
<b>2006</b>	3,577	40,415	7,153	80,830	10,730	121,245	28,612	161,660
<b>2007</b>	2,493	32,468	5,370	69,952	8,383	109,194	25,140	148,435
<b>2008</b>	1,704	22,195	4,179	54,437	6,930	90,275	21,348	126,043
<b>2009</b>	871	11,341	2,893	37,686	5,337	69,517	17,128	101,129
<b>2010</b>	4	49	1,488	19,389	3,526	45,933	12,199	72,027
<b>Ave.</b>	<b>1,729</b>	<b>21,294</b>	<b>4,217</b>	<b>52,459</b>	<b>6,981</b>	<b>87,233</b>	<b>20,866</b>	<b>121,859</b>

***Impact on Domestic Oil Production.*** The major study of the economic impact of the 1980 windfall profits tax, conducted by the Congressional Research Service (CRS), estimated that the tax reduced U.S. domestic oil production by 3 percent to 6 percent. Since U.S. oil producers are “price takers” who sell at world market prices, they must absorb the cost of the new tax and cannot pass it on to consumers. Hence, the tax raises the marginal cost of production, reducing the quantity of production at any given price.

In the following table (Table 3, below), we adopt the oil production forecasts of the Energy Information Administration (EIA) for 2006-2010 as the actual production levels that would occur without the proposed new tax. Our analysis further adopts the methodology of the CRS study and estimates that the current proposal would reduce production by the midpoint of the CRS estimate, or 4.5 percent. We also assume that U.S. domestic producers would not instantaneously adjust their production decisions in 2006. Using this approach, we estimate that the proposed tax would reduce U.S. domestic oil production by about 100 million barrels per-year.

The proposed new tax includes a provision providing that oil company revenues used for “qualified investments” would be exempt from the new tax; in effect, creating an investment deduction for the windfall profits tax. The deduction would cover certain investments in refining and gasohol facilities, but investments that might expand oil production would qualify only if they proved to be successful. Drilling for new oil is a

risky and expensive undertaking. Since drilling costs for non-productive wells would not be tax-deductible from the windfall profits tax, the proposed deduction would *not* increase incentives to take risks that they would not assume in the absence of the windfall profits tax. Moreover, researchers have established that investment in oil exploration is determined by potential returns, not additional cash flow from a possible tax deduction.<sup>12</sup> Consequently, our estimates do not include any additional production from increased investment.

**Table 3: Estimates of Oil Production, 2005-2010 (million barrels per year)<sup>13</sup>**

	Expected Production	Production with Tax	Foregone Production
<b>2005</b>	2,102	--	--
<b>2006</b>	2,201	2,201	0
<b>2007</b>	2,223	2,123	100
<b>2008</b>	2,245	2,144	101
<b>2009</b>	2,256	2,154	102
<b>2010</b>	2,197	2,098	99

**Gross and Net Windfall Profit Tax Revenues.** Under the current proposal, a windfall profit is defined as the difference between the market price and the base price of \$40 per-barrel, adjusted annually for inflation. The total windfall profits of U.S. integrated oil and gas companies would equal the number of barrels of oil domestically produced (adjusted for an estimated 4.5 percent reduction in production), times the windfall profits per-barrel. The proposal would apply a 50 percent excise tax to that total. Since windfall profit tax payments would be tax deductible, oil producers would pay corporate income tax on the profits minus the windfall profit tax paid. The foregone corporate income tax revenues would equal U.S. domestic oil production (without the reduction of production) times the windfall profit tax per oil barrel. Consequently, the net revenues of windfall profit tax system would equal the gross tax revenues less the foregone corporate income taxes.

We have estimated the profits subject to the windfall profits tax and the net windfall profit tax revenues, under four different five-year oil-price scenarios -- \$45, \$50, \$55 and \$60 per-barrel. The consumer price index (CPI) is used to adjust the base oil price over 2006 to 2010. Based on historical data, we estimate that the CPI should increase around 3 percent per year if the oil price is at a sustained level of \$45 per barrel, 4.5 percent at \$50 per barrel, 5.5 percent at \$55 per barrel and 6.5 percent at \$60 per barrel (Table 4, below). The five-year net tax revenues range from \$8.6 billion with oil selling for \$45 per-barrel for five years and 3 percent inflation, to \$48.7 billion with oil selling at \$60 per-barrel for five years and 6.5 percent inflation. (See Table 4, below)

<sup>12</sup> Alice M. Rivlin, Director of the Office of Management and Budget, Statement Before the Subcommittee on Energy of the Joint Economic Committee, United States Congress, April 25, 1979.

<sup>13</sup> *Annual Energy Outlook 2005*, Energy Information Administration, Department of Energy, January 2005.

**Table 4: Windfall Profits, Foregone Corporate Income Tax Receipts and Net Windfall Profit Tax Revenues (\$ million)**

<b>Scenario 1: Oil Price = \$45 per barrel, Inflation = 3.0%/year</b>						
	<b>Windfall Profits</b>	<b>Gross Tax Revenues</b>			<b>Foregone Corporate Income Tax</b>	<b>Net Tax Revenues</b>
		<b>Total</b>	<b>Windfall Profit Tax (50% rate)</b>	<b>Corporate Income Tax (35%)</b>		
<b>2006</b>	11,005	7,428	5,502	1,926	3,852	3,577
<b>2007</b>	8,079	5,454	4,040	1,414	2,961	2,493
<b>2008</b>	5,523	3,728	2,762	967	2,024	1,704
<b>2009</b>	2,822	1,905	1,411	494	1,034	871
<b>2010</b>	12	8	6	2	5	4
<b>Total</b>	27,442	18,523	13,721	4,802	9,876	8,647

<b>Scenario 2: Oil Price = \$50 per barrel, Inflation = 4.5%/year</b>						
	<b>Windfall Profits</b>	<b>Gross Tax Revenues</b>			<b>Foregone Corporate Income Tax</b>	<b>Net Tax Revenues</b>
		<b>Total</b>	<b>Windfall Profit Tax (50% rate)</b>	<b>Corporate Income Tax (35%)</b>		
<b>2006</b>	22,010	14,856	11,005	3,852	7,703	7,153
<b>2007</b>	17,407	11,750	8,704	3,046	6,380	5,370
<b>2008</b>	13,546	9,144	6,773	2,371	4,965	4,179
<b>2009</b>	9,378	6,330	4,689	1,641	3,437	2,893
<b>2010</b>	4,825	3,257	2,412	844	1,768	1,488
<b>Total</b>	67,166	45,337	33,583	11,754	24,253	21,084

<b>Scenario 3: Oil Price = \$55 per barrel, Inflation = 5.5%/year</b>						
	<b>Windfall Profits</b>	<b>Gross Tax Revenues</b>			<b>Foregone Corporate Income Tax</b>	<b>Net Tax Revenues</b>
		<b>Total</b>	<b>Windfall Profit Tax (50%rate)</b>	<b>Corporate Income Tax (35%)</b>		
<b>2006</b>	33,014	22,285	16,507	5,777	11,555	10,730
<b>2007</b>	27,172	18,341	13,586	4,755	9,958	8,383
<b>2008</b>	22,464	15,163	11,232	3,931	8,233	6,930
<b>2009</b>	17,299	11,677	8,649	3,027	6,340	5,337
<b>2010</b>	11,430	7,715	5,715	2,000	4,189	3,526
<b>Total</b>	111,380	75,181	55,690	19,491	40,275	34,906

<b>Scenario 4: Oil Price = \$60 per barrel, Inflation = 6.5%/year</b>						
	<b>Windfall Profits</b>	<b>Gross Tax Revenues</b>			<b>Foregone Corporate Income Tax</b>	<b>Net Tax Revenues</b>
		<b>Total</b>	<b>Windfall Profit Tax (50% rate)</b>	<b>Corporate Inc. Tax (35%)</b>		
<b>2006</b>	44,019	29,713	22,010	7,703	15,407	14,306
<b>2007</b>	36,937	24,933	18,469	6,464	13,537	11,395
<b>2008</b>	31,365	21,171	15,683	5,489	11,495	9,676
<b>2009</b>	25,165	16,987	12,583	4,404	9,223	7,764
<b>2010</b>	17,923	12,098	8,962	3,137	6,569	5,529
<b>Total</b>	155,410	104,902	77,705	27,197	56,230	48,671

**Shareholder Costs of Windfall Profits Rebate.** The windfall profit tax reduces the corporate earnings of integrated oil and gas companies from what they otherwise be, and consequently their share price based on their price-earnings ratio and their dividend payouts. The total costs for shareholders are the sum of the reductions in the companies' market capitalization and dividend payments. We have estimated these costs under each of the four price and inflation scenarios (Table 5, below). These estimates assume a price-earning ratio of 11 and a 30 percent dividend payout, based on the last five-year averages for U.S. domestic integrated oil and gas companies classified in Global Industry Classification Standard (GICS) 10102010. The average five-year costs to shareholders range from \$21.3 billion under five years of \$45 per-barrel oil and 3 percent inflation, to \$121.9 billion under five years of \$60 per-barrel oil and 6.5 percent inflation

**Table 5: Shareholder Costs of the Windfall Profits Tax (\$ million)**

<b>Scenario 1: Oil Price = \$45 per barrel, Inflation = 3.0%/yr</b>				
	<b>Foregone Earnings</b>	<b>Foregone Market Capitalization</b>	<b>Foregone Dividend Payouts</b>	<b>Total Shareholder Costs</b>
<b>2006</b>	3,577	39,342	1,073	40,415
<b>2007</b>	2,873	31,606	862	32,468
<b>2008</b>	1,964	21,606	589	22,195
<b>2009</b>	1,004	11,040	301	11,341
<b>2010</b>	4	48	1	49
<b>Average</b>	1,884	20,728	565	21,294

<b>Scenario 2: Oil Price = \$50 per barrel, Inflation = 4.5%/yr</b>				
	<b>Foregone Earnings</b>	<b>Foregone Market Capitalization</b>	<b>Foregone Dividend Payouts</b>	<b>Total Shareholder Costs</b>
<b>2006</b>	7,153	78,684	2,146	80,830
<b>2007</b>	6,190	68,095	1,857	69,952
<b>2008</b>	4,817	52,992	1,445	54,437
<b>2009</b>	3,335	36,686	1,001	37,686
<b>2010</b>	1,716	18,874	515	19,389
<b>Average</b>	4,642	51,066	1,393	52,459

<b>Scenario 3: Oil Price = \$55 per barrel, Inflation = 5.5%/yr</b>				
	<b>Foregone Earnings</b>	<b>Foregone Market Capitalization</b>	<b>Foregone Dividend Payouts</b>	<b>Total Shareholder Costs</b>
<b>2006</b>	10,730	118,026	3,219	121,245
<b>2007</b>	9,663	106,295	2,899	109,194
<b>2008</b>	7,989	87,878	2,397	90,275
<b>2009</b>	6,152	67,672	1,846	69,517
<b>2010</b>	4,065	44,714	1,219	45,933
<b>Average</b>	7,720	84,917	2,316	87,233

<b>Scenario 4: Oil Price = \$60 per barrel, Inflation = 6.5%/yr</b>				
	<b>Foregone Earnings</b>	<b>Foregone Market Capitalization</b>	<b>Foregone Dividend Payouts</b>	<b>Total Shareholder Costs</b>
<b>2006</b>	14,306	157,368	4,292	161,660
<b>2007</b>	13,136	144,495	3,941	148,435
<b>2008</b>	11,154	122,697	3,346	126,043
<b>2009</b>	8,949	98,444	2,685	101,129
<b>2010</b>	6,374	70,115	1,912	72,027
<b>Average</b>	10,874	118,624	3,235	121,859

## **Economic Impact of a Windfall Profits Tax on Retirement Savings**

The reductions in the market value and dividend payouts of U.S. oil producers would reduce the value of pension funds and most retirement accounts, because almost all forms of retirement savings include significant investments in the energy sector, either directly or through mutual funds and index funds. U.S. public and private pension funds and personal retirement accounts currently hold more than \$11.5 trillion in assets, with average account holdings of about \$66,000. These assets include not only corporate equities and mutual funds, but also fixed-income instruments and other forms of investments such as real estate and cash equivalents. The various forms of retirement funds and savings, held by both current retirees and current workers, hold approximately 50 percent of their total assets in equities, of which approximately 4.3 percent are shares in U.S. domestic integrated oil and gas companies. These funds and accounts hold approximately \$267 billion in oil-company stocks, directly or through mutual and index funds, or about 41 percent of market in those stocks. Consequently, Americans collecting or contributing to pensions or retirement accounts will bear 41 percent of the shareholders' costs of a windfall profits tax.

We calculate that the shareholders' cost of a windfall profits tax will average from \$21 billion to \$122 billion per year over the next five years, depending on the price of oil and inflation rate. Therefore, over the five-years 2006-2010, the costs borne by the private and public pension plans and retirement accounts, which own 41 percent of oil company shares, would average \$8.7 billion to \$50 billion per year. On average, the foregone benefit for the average retiree collecting payments from such plans or accounts, or the average worker contributing to a pension plan or retirement account, would amount to \$50 to \$287 per year, or \$4 to \$24 per month.

*Assets of Pension Fund and Retirement Accounts.* To derive these estimates, we start with the value of all retirement fund assets. This value rises and falls with the stock market, while also generally rising with increasing participation and inflation. In recent years, for example, the total value of these assets fell from roughly \$10 trillion in 2000 to \$8.6 trillion in 2002, a decline of more than 15 percent; and by the end of 2004, the total value of the assets had rebounded to more than \$11.5 trillion. The funds which hold and invest these assets can be roughly divided into three major types: Private-sponsored pension funds, public-sponsored pension funds, and individual retirement accounts. The two largest components of the U.S. retirement market are assets held in personal IRAs and in defined-contribution plans (principally 401(k)s), followed closely by public state and local employee plans and private defined-benefit plans. Within the class of private retirement funds, the assets of defined-benefit plans have generally declined over the past five years, especially a share of all retirement assets. By contrast, eight of the ten largest pension funds in the country are state and local public-employee funds (Table 6, below).

**Table 6: Assets of Retirement Funds and Accounts, By Type (\$ billion)<sup>14</sup>**

	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>All Funds</b>	10,074	9,599	8,640	10,390	11,509
<b>Private Pension Funds</b>	4,355	3,916	3,309	4,027	4,473
<b>Defined Benefit</b>	1,914	1,686	1,409	1,680	1,811
<b>Defined Contribution</b>	2,441	2,231	1,900	2,347	2,662
<b>(401(k))</b>	1,750	1,681	1,502	1,868	2,109
<b>Public Pension Funds</b>	3,090	3,063	2,798	3,283	3,561
<b>Federal Government</b>	797	860	894	959	1,024
<b>State &amp; Local Employees</b>	2,293	2,204	1,904	2,324	2,537
<b>IRA</b>	2,629	2,619	2,533	3,080	3,475

Participation in retirement plans has increased sharply over the last quarter-century. Today, more than 50 percent of private-sector workers participate in some form of retirement saving, including more than 45 million households with IRAs, Roth IRAs or employer-sponsored IRAs (Sep-IRAs). Among state and local public workers, roughly 75 percent participate in their pension plans. All told, there are approximately 174 million retirement accounts (commonly called “participants”), including those held by retirees and current workers, and counting individually multiple accounts held by one retiree or worker. The average value of the assets in these accounts today is \$66,068 per account, ranging from \$22,655 for IRAs (including Sept-IRAs) to \$156,617 for the average account with state and local employee pension plans.

**Table 7: Number of Accounts/Participants and Assets per Account<sup>15</sup>**

	<b>Accounts (million)</b>	<b>Average Assets (\$ million)</b>
<b>All Funds</b>	174.2	66,068
<b>Private Pension Funds</b>	101.8	43,938
<b>Defined Benefit</b>	41.4	43,734
<b>Defined Contribution</b>	60.4	44,078
<b>401(k)</b>	46.2	45,649
<b>Public Pension Funds</b>	27.2	130,926
<b>Federal Government</b>	11.0	93,091
<b>State &amp; Local Employees</b>	16.2	156,617
<b>IRAs</b>	45.2	22,655

<sup>14</sup> Flow of Funds Accounts 2005 Board of Governors of the Federal Reserve System; Investment Company Institute.

<sup>15</sup> Employee Benefit Research Institute (EBRI) Databook 2005, Facts from EBRI April 2005, Flow of Funds Accounts 2005 Board of Governors of the Federal Reserve System, Investment Company Institute.

**Asset Allocations.** Retirement plans are generally administered by pension fund managers, mutual funds, brokerage firms and life insurance companies. Pension funds invest primarily in long-term securities and are among the largest investors in the equity market. Over the last decade, a shift in their asset allocation to equity investments has accelerated, at the expense principally of fixed-income instruments. In 2004, pension plans invested 42 percent of their assets directly in corporate equities, 23 percent in mutual funds, 12 percent in fixed-income products, 4 percent in short-term instruments and the remainder in other assets such as real estates and private equity. Among all plans and accounts, state and local public employee pension plans are the most heavily committed to corporate equities: With half of the total assets of the private plans, state and local public employee pensions invested nearly as much as all private plans in equities. The following table (Table 8) shows how the \$11.5 trillion in retirement assets are allocated (2004) by type of account and type of asset.

**Table 8: Asset Allocations by Retirement Plan, 2004 (\$ billion)<sup>16</sup>**

	<b>Direct Equities</b>	<b>Mutual Funds</b>	<b>Fixed Income</b>	<b>Short Term</b>	<b>Other</b>
<b>All Funds</b>	4,860	2,680	1,368	471	2,132
<b>Private Pension Funds</b>	1,691	1,174	712	282	614
<b>Defined Benefit</b>	720	206	530	155	200
<b>Defined Contribution</b>	971	968	182	127	414
<b>401(k)</b>	899	896	--	--	--
<b>Public Pension Funds</b>	1,766	227	655	46	867
<b>Federal Government</b>	99	--	69	--	856
<b>State &amp; Local Employees</b>	1,667	227	587	46	11
<b>IRA</b>	1,402	1,279	--	143	651

**Corporate Equities.** The mutual fund holdings of retirement plans and accounts include equities as well as other financial instruments that would be unaffected by a windfall profits tax. Therefore, we also have analyzed the holdings of mutual funds, according to the type of retirement plan or account. This analysis shows that the total holdings of equities held by these plans and accounts, directly or indirectly through mutual funds, are \$6.2 trillion, including almost \$4.9 trillion in direct corporate holdings and more than \$1.3 trillion in equities held through mutual funds. Together, equities held directly or indirectly account for 53.9 percent of all the assets of retirement plans and accounts. The percentage of equities, as a share of the total assets of a plan or account, ranges from 70.2 percent for state and local public employee plans and 63.9 percent for 401(k)s, to just 9.7 percent for the federal retirement system.(See Table 9, below)

<sup>16</sup> Flow of Funds Accounts 2005 Board of Governors of the Federal Reserve System, Investment Company Institute.

**Table 9: Assets and Equity Holdings by Plan or Account Type, 2004 (\$ billion)<sup>17</sup>**

	Total Assets	Corporate Equities		
		Total Equities & Share of Total Assets	Directly in Stocks	Indirectly in Mutual Funds
<b>All Funds</b>	11,509	6,199 (53.9%)	4,860	1,340
<b>Private Pension Funds</b>	4,473	2,278 (50.9%)	1,691	587
<b>Defined Benefit</b>	1,811	823 (45.4%)	720	103
<b>Defined Contribution</b>	2,662	1,455 (54.7%)	971	484
<b>401(k)</b>	2,109	1,347 (63.9%)	899	448
<b>Public Pension Funds</b>	3,561	1,880 (52.8%)	1,766	114
<b>Federal Government</b>	1,024	99 (9.7%)	99	0
<b>State &amp; Local Employees</b>	2,537	1,781 (70.2%)	1,667	114
<b>IRA</b>	3,475	2,042 (58.8%)	1,402	640

*Retirement Plan Holdings of Integrated Oil and Gas Companies.* There are no direct data on the percentage of the equity holdings of different types of retirement plans and account which are held in the stocks of integrated oil and gas company stocks. However, detailed data are available on the assets of most of the ten largest U.S. pension plans, and those data show that their holdings of shares in U.S. integrated oil and gas companies account for 4.0 percent to 4.5 percent of their total equity holdings. Based on these findings, we estimate that roughly 4.3 percent of the equity holdings of retirement plans and accounts are held in U.S. oil stocks. Based on these estimates and the total \$650 billion market capitalization of U.S. domestic integrated oil and gas companies (market capitalization of firms classified GIC 10102010), we can estimate the value of oil stocks held in different types of pension and retirement plans.

We estimate that pension and retirement plans hold some \$267 billion in oil company stocks, directly or through mutual funds, or about 41 percent of the total market value of U.S. oil companies. Among the various kinds of pension and retirement plans, the largest holdings of oil stocks are in IRAs and state and local public employee plans, which hold, respectively, \$88 billion and \$77 billion in oil stocks. All private pension plans, including 401(k)s, together hold \$98 billion in oil stocks. (See table 10, below)

<sup>17</sup> *Ibid.*

**Table 10: Pension Plan and Retirement Account Holdings of Oil Stocks, 2004<sup>18</sup>**

	Total Equity Holdings (\$ billion)	Holdings in U.S. Integrated Oil and Gas Companies	
		(\$ billion)	Share of Oil Sector's Market Value
<b>Total</b>	6,199	267	41%
<b>Private Pension Funds</b>	2,278	98	15%
<b>Defined Benefit</b>	823	35	5%
<b>Defined Contribution</b>	1,455	63	10%
<b>401(k)</b>	1,347	58	9%
<b>Public Pension Funds</b>	1,880	81	12%
<b>Federal Government</b>	99	4	1%
<b>State &amp; Local Employees</b>	1,781	77	12%
<b>IRA</b>	2,042	88	14%

### Impact of a Windfall Profits Tax on Pension Plans and Retirement Accounts

These estimates allow us to project the impact of a windfall profits tax on participants in pension plans and retirement accounts. First, we calculate the “opportunity cost” per participant/account, based on the foregone market capitalization and dividend payouts from the tax’s effect on oil company earnings. We estimate these effects for each type of pension plan and retirement account and for each of our four scenarios for oil prices and inflation (Table 11, below). These estimates capture the foregone gains for account holders under the four scenarios for oil prices and inflation and do not address the impact on market capitalization and dividends of increases in oil company earnings arising from the higher oil prices. The subsequent section will examine those effects.

Our analysis shows that over five years, the opportunity costs of a windfall profits tax – the foregone increases in share prices and dividends arising from the tax’s impact on higher earnings – for the average pension plan and retirement account-participant range from \$50 per year, per account, with oil at \$45 per barrel and 3 percent inflation, to \$287 per year, per account, with oil at \$60 per barrel and 6.5 percent inflation. The greatest opportunity costs fall to participants in state and local employee pension plans, with the largest average pensions (\$156,617) and the largest share of those pensions invested in stocks: Their foregone increases in the value of their pensions range from \$155 per year, per account, under the \$45 per barrel five-year scenario, to \$886 per year, per account

<sup>18</sup> Flow of Funds Accounts 2005 Board of Governors of the Federal Reserve System, Investment Company Institute, WorldScope.

under the \$60 per-barrel five-year scenario. The foregone increase in the value of an average IRA ranges from \$64 per-year, per account, under the \$45 per barrel scenario to \$364 per year, per account, under the \$60 per barrel scenario. Similarly, the foregone increases in the value of an average 401(k) range from \$41 per year, per account, under the \$45 per-barrel scenario to \$235 per year, per account, under \$60 per barrel oil.

**Table 11: Estimated Impact of a Windfall Profits Tax  
on the Value of Pension and Retirement Accounts**

<b>Scenario 1: Oil Price = \$45 per barrel, Inflation = 3.0 percent per year Total Opportunity Costs = \$21 billion per year</b>			
	<b>Opportunity Costs (\$ billion)</b>	<b>Opportunity Costs per Account/Participant (\$)</b>	
		<b>Per Year</b>	<b>Per Month</b>
<b>All Funds</b>	8.7	50	4
<b>Private Pension Funds</b>	3.2	32	3
<b>Defined Benefit Plans</b>	1.2	28	2
<b>Defined Contribution Plans</b>	2.0	34	3
<b>401(k)</b>	1.9	41	3
<b>Public Pension Funds</b>	2.6	97	8
<b>Federal Government</b>	0.1	13	1
<b>State &amp; Local Employees</b>	2.5	155	13
<b>IRA</b>	2.9	64	5

<b>Scenario 2: Oil Price = \$50 per barrel, Inflation = 4.5 percent per year Total Opportunity Costs = \$52 billion per year</b>			
	<b>Opportunity Costs (\$ billion)</b>	<b>Opportunity Costs per Account/Participant (\$)</b>	
		<b>Per Year</b>	<b>Per Month</b>
<b>All Funds</b>	21.5	124	10
<b>Private Pension Funds</b>	7.9	78	6
<b>Defined Benefit Plans</b>	2.9	69	6
<b>Defined Contribution Plans</b>	5.0	84	7
<b>401(k)</b>	4.7	101	8
<b>Public Pension Funds</b>	6.5	240	20
<b>Federal Government</b>	0.3	31	3
<b>State &amp; Local Employees</b>	6.2	381	32
<b>IRA</b>	7.1	157	13

<b>Scenario 3: Oil Price = \$55 per barrel, Inflation = 5.5 percent</b>			
<b>Total Opportunity Costs = \$87 billion per year</b>			
	<b>Opportunity Costs (\$ billion)</b>	<b>Opportunity Costs per Account/Participant (\$)</b>	
		<b>Per Year</b>	<b>Per Month</b>
<b>All Funds</b>	35.8	205	17
<b>Private Pension Funds</b>	13.1	129	11
<b>Defined Benefit Plans</b>	4.7	115	10
<b>Defined Contribution Plans</b>	8.4	139	12
<b>401(k)</b>	7.8	168	14
<b>Public Pension Funds</b>	10.8	399	33
<b>Federal Government Ret.</b>	0.6	52	4
<b>State &amp; Local Employment Ret.</b>	10.3	634	53
<b>IRA</b>	11.8	261	22

<b>Scenario 4: Oil Price = \$60 per barrel, Inflation = 6.5 percent</b>			
<b>Total Opportunity Costs = \$122 billion per year</b>			
	<b>Opportunity Costs (\$ billion)</b>	<b>Opportunity Costs per Account/Participant (\$)</b>	
		<b>Per Year</b>	<b>Per Month</b>
<b>All Funds</b>	50.0	287	24
<b>Private Pension Funds</b>	18.4	180	15
<b>Defined Benefit Plans</b>	6.6	160	13
<b>Defined Contribution Plans</b>	11.7	194	16
<b>401(k)</b>	10.9	235	20
<b>Public Pension Funds</b>	15.2	557	46
<b>Federal Government Ret.</b>	0.8	73	6
<b>State &amp; Local Employment Ret.</b>	14.4	886	74
<b>IRA</b>	16.5	364	30

***Impact on Shareholders as a Share of the Future Value of Oil Companies.*** These estimates capture the foregone gains from the windfall profits tax, but not the increase in the market value of oil stocks from higher oil prices. To analyze this effect as well, we calculated the impact of the four scenarios, including the higher oil prices and inflation, on the market capitalization of U.S. domestic integrated oil and gas companies in 2010.

We then calculated the costs of the windfall profits tax to all oil company shareholders, as a percentage of the total adjusted market value of their stocks, under each of the oil-price scenarios. This analysis shows that the windfall profits tax would cost oil company shareholders between 2.7 percent and 10.9 percent of the value of their holdings in those stocks in 2010, depending upon the world market price of oil and the U.S. inflation rate.

**Table 12: Cost of the Windfall Profits Tax on the Oil Company Shareholders, 2010**

<b>Price of Oil and Inflation rate</b>	<b>Shareholder Costs per-year (\$ billion)</b>	<b>Projected Market Capitalization, 2010 (\$ billion)</b>	<b>Shareholder Cost as a Percentage of Market Capitalization</b>
\$45/barrel, 3.0 %	21.3	784	2.7%
\$50/barrel, 4.5%	52.5	909	5.8%
\$55/barrel, 5.5%	87.2	995	8.8%
\$60/barrel, 6.5%	121.9	1,120	10.9%

## **Conclusion**

This analysis demonstrates that a windfall profits tax on U.S. domestic oil companies would have a series of unexpected or adverse effects. It would raise considerable revenues, but much of those revenues would be offset by reduced corporate income revenues. Depending on the price of oil, the tax standing alone would raise between \$18.5 billion and \$104.9 billion over five years. However, after taking account of the revenue offsets from the tax-deductibility of the windfall profits tax and the reduction in production from the tax, the measure would raise on a net basis \$8.6 billion to \$48.7 billion over five years. As just noted, a windfall profit tax also would likely reduce U.S. domestic oil production by an average of 100 million barrels per-year, which would have to be offset by higher oil imports of the same quantities. Depending on the price of oil, the tax would cost shareholders of oil company stocks an average of between \$21.3 billion per year and \$121.9 billion per year in foregone increases in the value of their stock and foregone dividend payouts. These foregone gains would represent between 2.7 percent and 10.9 percent of the total projected value of oil company stocks in 2010.

Finally, since 41 percent of oil company stocks are currently held in various forms of pension plans and retirement accounts, retirees and those currently saving for retirement would bear much of the burden of those foregone gains. The foregone gains for all pension plans and retirement account would total between \$8.7 billion a year and \$50 billion a year, depending on the price of oil and inflation rate. For individual accounts, the size of these foregone gains would depend on the size of the account, how much of the plan or account is invested in corporate equities (directly or indirectly), and the price of oil: We estimate that these foregone gains, per account, range from \$13 per year (federal retirement accounts, oil at \$45 per barrel) to \$886 per year (state and local public employee pension accounts, oil at \$60 per barrel).

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