

Proposal 5: Eliminating Fossil Fuel Subsidies

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Deficit Reduction (10-year): \$41 billion.

Broader Benefits: Levels the playing field among fossil fuel producers relative to other business investments; leads to potentially lower global fuel prices by providing the United States with increased leverage in negotiations over eliminating fossil fuel subsidies in the developing world.

Introduction

The federal government has subsidized the production of fossil fuels through the tax code for a century. While such subsidies may have supported incremental investment in what was a very risky economic activity—drilling that may not yield a productive hydrocarbon field—the advances in technology and the high prices for oil in recent years have significantly changed the risk–reward calculus for domestic hydrocarbon investment. Indeed, the impact of these tax preferences on investment decisions is dominated by factors driving world oil prices (e.g., Asian demand and political events in the Middle East) and by the technological improvements in drilling for shale gas and oil and tight oil. Today, the U.S. government effectively transfers by way of tax expenditures more than \$4 billion annually from taxpayers to fossil fuel producers (primarily oil and gas firms) with very little to show for it.

This proposal calls for eliminating twelve tax provisions that subsidize the production of fossil fuels in the United States. Implementing this proposal will contribute to a leveling of the playing field among oil and gas companies, since independent producers enjoy greater tax benefits than the oil majors, and will promote the efficiency in allocating capital across the U.S. economy. Since these subsidies have a very small impact on production, their removal will not materially increase retail fuel prices, reduce employment, or weaken U.S. energy security. This proposal complements other proposals to simplify the corporate tax code, and thus could facilitate the political support necessary to enact a simpler, more efficient corporate tax code. In addition, removing U.S. fossil fuel subsidies would enable the U.S. government to make the case more effectively that large developing countries (such as China and India) should phase out their fossil fuel

consumption subsidies that contribute to higher oil prices in the United States.

The Challenge

The U.S. tax code has provided tax preferences for oil and gas production activities for a century. Given the uncertainties that characterized drilling in the early twentieth century, government subsidies mitigated the risk of such investments and were intended to promote production of fossil fuels. Technological advances have dramatically lowered the prospect of oil and gas drilling resulting in a dry hole, thereby reducing the risk to investors, and have increased scientific understanding of the adverse pollution impacts from fossil fuel combustion, including premature mortality and global climate change. Moreover, the globally integrated nature of the oil market means that factors beyond U.S. production, such as Asian economic growth and OPEC production quotas, drive world oil prices and gasoline prices at the pump.

Since 1913, firms have been able to expense so-called intangible drilling costs, which are drilling-related expenditures that do not have salvage value such as labor and drilling fluids, in lieu of depreciating them over the economic life of a well. This policy differs from the depreciation rules that cover most capital investments in other industries of the American economy. By allowing an oil and gas firm to expense these costs instead of depreciating them over the economic life of the well, the firm benefits based on the differential between the expensed costs and the present value of the costs depreciated over the typical economic life of such a project. These intangible drilling costs represent about two-thirds of U.S. drilling costs.

Since 1926, firms could employ preferential depreciation rules under percentage depletion that allows them to deduct a percentage of their revenues (as opposed to their costs) of developing a well. In contrast to the principle that capital costs should be depreciated over the economic life of a project, this percentage-depletion provision disconnects depreciation benefits from project costs by making depreciation a function of revenues. Since revenues reflect crude oil prices, which are typically driven by the fundamentals of the world oil market, the accounting of depreciation of a project for tax purposes may have little to no relationship with project costs. Percentage depletion is calculated at 15 percent of revenues for oil and gas, and at 10 percent for coal.

In more recent decades, a variety of other subsidies have been employed to support fossil fuel production. Some of the prominent subsidies, such as the unconventional natural gas production tax credit that spurred initial commercialization of hydraulic fracturing (fracking) techniques in shale gas fields, have expired. Unlike the tax credit that supported fracking for natural gas, none of the current tax expenditures for fossil fuels targets novel techniques or explicitly promotes innovation. Several other subsidies in the tax code are designed to phase out at specified oil prices and are not applicable in today's high-crude-oil-price environment, such as the enhanced-oil-recovery tax credit that subsidizes the injection of carbon dioxide or other tertiary methods to recover oil and gas. In recent years, oil and gas producers have been able to claim a 6 percent deduction and coal producers a 9 percent deduction of taxable income under the manufacturing tax deduction established in 2004.

In total, there are twelve provisions in the tax code that subsidize activities associated with the production of fossil fuels that impose an estimated \$41.4 billion ten-year revenue loss on the federal treasury (OMB 2012). Revenue losses may turn out to be even higher, as the significant increase in domestic drilling activity—there were four times as many rigs drilling in the United States in 2012 as there were in 2008 (Morse et al. 2012)—could translate into greater claims on these tax preferences. Recent assessments of U.S. hydrocarbon reserves illustrate the prospect for the United States to double domestic crude oil production by 2020 and for natural gas production to continue to increase and enable net exports of gas. Depending on the types of oil and gas companies undertaking this exploration and development, and their liabilities before consideration of these tax preferences, the effective impact of these subsidies on the deficit could grow substantially over the next decade. It is important to note that if crude oil prices increase over time, as currently forecast by the Energy Information Administration, then the magnitude

of the percentage-depletion subsidy could increase, since it is a function of revenues and, therefore, prices.

Proponents of fossil fuel subsidies claim that these subsidies support American energy independence. This argument does not appear to be applicable to coal, the United States has been largely self-sufficient in coal over its history, with modest imports and exports in recent years. Moreover, it is quite unlikely that the current oil and gas subsidies explain this bullish outlook for domestic oil and gas production, since most of the prominent subsidies—such as intangible drilling costs expensing and percentage depletion—have been in the tax code over the 1970–2009 period that was characterized by a nearly 50 percent decline in U.S. oil production.

More important, the economic analyses of the impact of oil and gas subsidies show very little response in domestic production to these tax preferences. In one analysis, the estimated reduction in U.S. oil production would amount to about 26,000 barrels per day (Allaire and Brown 2009). This is quite modest considering the rapid growth in domestic oil production, which has grown, on average, each month by more than 30,000 barrels per day since January 2009. Thus, these tax subsidies do not meaningfully increase production, and as a result they do not stimulate job creation or lower U.S. oil, petroleum product, and natural gas prices. As largely inframarginal subsidies, they convey billions of dollars of benefits to the firms claiming them without an identifiable benefit for consumers or for the nation's energy security.

The applicability of tax provisions varies between independent oil and gas producers and integrated companies (those that produce and refine hydrocarbons). While independents can expense all their intangible drilling costs, integrated firms may expense only 70 percent of these costs and must depreciate the balance over five years. The percentage-depletion provision applies only to properties that produce less than 1,000 barrels of oil equivalent per day. Furthermore, only independents may use percentage depletion; integrated firms must use cost depletion. As a result, major oil companies likely face a lower, but positive, effective tax rate than the marginal corporate income tax rate, while independents likely face a negative tax rate (Metcalf 2009).

Eliminating these tax preferences for fossil fuel development would improve the efficiency of the tax code with respect to capital investment. The current approach provides favorable incentives that skew investment toward fossil fuel development and away from other productive uses of capital. Moreover, the limits and restrictions on the use of several of these subsidies (such as percentage depletion) further skew investment and drilling activity away from the oil majors and toward smaller, independent oil and gas producers.

TABLE 1.

Provisions of the U.S. Tax Code that Subsidize Fossil Fuel Extraction

Tax Provision	10-year revenue score (billions of dollars)
1. Expensing intangible drilling costs	\$13.9
2. Domestic manufacturing tax deduction for oil and gas	\$11.6
3. Percentage depletion for oil and gas wells	\$11.5
4. Percentage depletion for hard mineral fossil fuels	\$1.7
5. Increase geological and geophysical expenditure amortization for independents	\$1.4
6. Expensing of coal exploration and development costs	\$0.4
7. Capital gains treatment for royalties	\$0.4
8. Domestic manufacturing tax deduction for coal	\$0.3
9. Deduction for tertiary injectants	\$0.1
10. Exception for passive loss limitations for working interests in oil and gas properties	\$0.1
11. Enhanced oil recovery credit	\$0
12. Credit for oil and gas produced from marginal wells	\$0
Total	\$41.4

Source: OMB (2012).

Note: The last two provisions in this table are not expected to have a revenue impact because they phase out at oil prices below the levels expected over the ten-year scoring window.

The Proposal

This proposal calls for eliminating twelve provisions in the U.S. tax code that deliver tax preferences for oil, gas, and coal production activities. Table 1 lists the twelve provisions and their estimated ten-year revenue score from the FY 2013 budget proposal from the Obama administration (OMB 2012). These tax provisions effectively reduce the cost to drill or mine for fossil fuels by allowing firms to expense in the current year various costs instead of depreciating them over the economic life of the project and to deduct costs and claim tax credits for specific activities (several of which are not operational at today's high oil prices).

Three oil and gas provisions—expensing intangible drilling costs, the section 199 domestic-manufacturing tax deduction for oil and gas, and percentage depletion for oil and gas wells—represent 89 percent of the fiscal benefits from eliminating fossil fuel subsidies. The expensing of intangible drilling costs permits an oil and gas producer to expense instead of depreciate over the economic life of the well the costs that are associated with elements of a drilling project that do not have scrappage value. The domestic manufacturing tax deduction for oil and gas is a version of a broader tax deduction that is intended to support domestic manufacturing activities.

Of course, oil and gas production are not manufacturing activities, and one cannot relocate a hydrocarbon field to another country as one could with a manufacturing facility. Finally, the percentage depletion for oil and gas wells allows small producers to deduct a percentage of their revenues in lieu of (and in excess of) costs as a basis for depreciation (or, as referred to in the context of exhaustible resources, depletion).

BUDGET IMPACT

Eliminating the fossil fuel subsidies under this proposal would deliver approximately \$41.4 billion in greater revenues to the U.S. Treasury over a ten-year period, according to the FY 2013 budget proposal by the Obama administration (OMB 2012). Again, this figure may be a low estimate of the revenue gains from eliminating these subsidies, as domestic oil production has increased in recent years, reversing a trend of declining production for most of the past four decades. Some analysts project that U.S. oil production could double over the next decade. If this doubling were to occur, then the magnitude of the federal tax expenditures subsidizing oil development and production could easily exceed the estimates in table 1, which reflect much-more-modest projected changes in oil production over time.

ECONOMIC BENEFITS AND COSTS

Per unit of drilling activity, independent oil and gas producers benefit more than the major oil companies from these tax preferences. Several of the tax provisions apply exclusively, or only partially, to independent oil and gas producers. Because independents finance projects substantially through cash flow instead of through raising debt, this proposal to eliminate the tax provisions that subsidize the activities of those independents could impact their financing strategy. For example, these companies may need to raise debt and equity for their drilling projects, not unlike how firms in other sectors of the economy finance major projects. Eliminating these subsidies would level the cost of capital across various types of oil and gas producers. This would result in a more-efficient allocation of capital in the U.S. economy.

Because these subsidies do not effectively stimulate much additional production, eliminating them in the United States would deliver relatively modest environmental benefits. One recent analysis showed that eliminating the intangible-drilling-cost expensing provision and percentage cost depletion would have lowered U.S. carbon dioxide emissions by about 4 million metric tons annually over 2005–09, or less than 0.2 percent of emissions from petroleum consumption over that period (Allaire and Brown 2012). If such reform of U.S. fossil fuel subsidies leveraged reform of fossil fuel *consumption* subsidies in developing countries, then it could significantly lower global carbon dioxide emissions, to the benefit of the climate. (See International Implications section below.)

U.S. POLITICAL CONTEXT

President Obama has advocated for the elimination of fossil fuel subsidies in each of his budget proposals to Congress since 2009. Congress has not acted on this package in its entirety. In 2011, the U.S. Senate failed to secure the sixty-vote supermajority necessary to pass S. 940, the Close Big Oil Tax Loopholes Act, which would have eliminated the intangible drilling cost expensing and the section 199 manufacturing deduction for the major oil companies. Supporters of these tax provisions subsidizing fossil fuels claim that eliminating these provisions would cost jobs, reduce U.S. energy security, and hurt small businesses. As noted above, these provisions do not meaningfully impact production; instead, they effectively transfer monies from taxpayers to the owners of oil, gas, and coal companies. Thus, they do not represent a cost-effective way to promote job creation, and the record of declining oil production over 1970–2008 (except for the coming online of the Alaskan north slope fields) indicates that they do not deliver on energy security goals. Finally, it is important to note that these subsidies accrue to some of the largest companies in the world, and some of the smaller oil companies (e.g., the

independents) still have market capitalizations in the tens of billions of dollars. A small business in fossil fuel industries is meaningfully larger than a small business in most other sectors of the U.S. economy.

Several approaches could broaden political support for eliminating fossil fuel subsidies. First, the elimination of fossil fuel tax preferences could be paired with corporate tax reform that lowers the marginal tax rate on corporate income. This is generally consistent with a variety of proposals to clean up the corporate tax code—e.g., remove various deductions, tax credits, and other tax preferences—in exchange for a lower marginal rate. Even a modest reduction in the marginal rate and the elimination of these tax preferences would likely elicit support from major oil companies, since those companies benefit less than the smaller producers from the subsidies. Second, one could propose to eliminate all energy subsidies, which would appeal to some deficit hawks; see EIA (2011) for a summary of energy subsidies. Of course, the support for clean-energy technologies delivers positive societal benefits in terms of cleaner air, and other policies—such as a carbon tax, a clean-energy standard, or other legislation that creates private sector demand for these technologies—should be paired with this subsidy reform. Such a proposal would anticipate a likely challenge to subsidies for renewable and energy efficiency technologies, especially since these tax preferences have sunset provisions (unlike the fossil fuel subsidies) and thus require legislative action to sustain them every few years.

INTERNATIONAL IMPLICATIONS

At the 2009 Pittsburgh G-20 summit, the leaders of the twenty largest developed and developing economies agreed to phase out fossil fuel subsidies. The United States spearheaded this agreement, and has continued to receive attention from leaders in subsequent G-20 meetings. Progress in delivering on this objective has been mixed, though, starting with the failure of the United States to remove its subsidies. Leadership via the action of eliminating these subsidies would empower the United States to push on other large developed and developing economies to rationalize their fossil fuel prices.

Whereas the United States subsidizes fossil fuel production, most fossil fuel subsidies in the developing world support consumption by lowering prices below competitive market levels. The fossil fuel consumption subsidies in the developing world, approximately \$500 billion per year, significantly exceed fossil fuel production subsidies, which are on the order of \$100 billion, and fossil fuel subsidies globally result in increased consumption and hence higher prices. Eliminating global fossil fuel subsidies would yield significant economic, energy, and environmental benefits. Global oil consumption could fall by more than 4 million barrels per day, which would

lower crude oil prices and benefit consumer nations like the United States. Global carbon dioxide emissions contributing to climate change would fall about 7 percent by 2020 and 10 percent (by more than 5 billion tons of carbon dioxide per year) by 2050 (International Energy Agency [IEA] 2012).

POTENTIAL FOSSIL FUEL SUBSIDIES BEYOND THE SCOPE OF THIS PROPOSAL

This proposal focuses on a narrow set of tax provisions that reduce the tax liability for various oil, natural gas, and coal production activities. A variety of other federal policies and programs that could be considered fossil fuel subsidies are beyond the scope of this proposal. For example, federal spending on highway and related road construction may enable greater gasoline and diesel consumption. Limiting liability for economic damages associated with an offshore oil and gas drilling accident effectively subsidizes drilling activity by shifting the expected costs of an oil spill to the local communities or the government, or both. Perhaps most important, a large economic literature has highlighted the significant pollution—and, in the case of transportation fuels, congestion costs—that burning fossil fuels imposes on American society. If fossil fuels bore the full cost that they impose on the economy, then the federal gasoline tax could be quadrupled and coal could be taxed on the order of 200 percent (Jorgenson 2012; Parry and Small 2005). Some of

this full social costing of fossil fuels would reflect the carbon dioxide emissions from fossil fuels; such a carbon tax is explored elsewhere in this volume (Morris 2013), but air pollution–related premature mortality comprises a majority of the increase in taxes necessary to correct for these market failures.

Conclusion

The elimination of subsidies for U.S. fossil fuel production could provide meaningful deficit reduction benefits without increasing energy prices, adversely impacting U.S. energy security, or undermining job creation. Since the investment decisions in new production primarily reflect fossil fuel prices and technological innovations in this sector, these subsidies represent transfers from taxpayers to the owners of capital in these industries. Removing these subsidies from the tax code would help level the playing field among fossil fuel producers and among all firms securing capital for project investment. Moreover, such an effort could contribute to *lower* fuel prices in the United States if it enables the U.S. government to leverage compliance by other large economies with the G-20 pledge to eliminate fossil fuel subsidies, which tend to subsidize consumption in the developing world and thus prop up global energy prices.

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