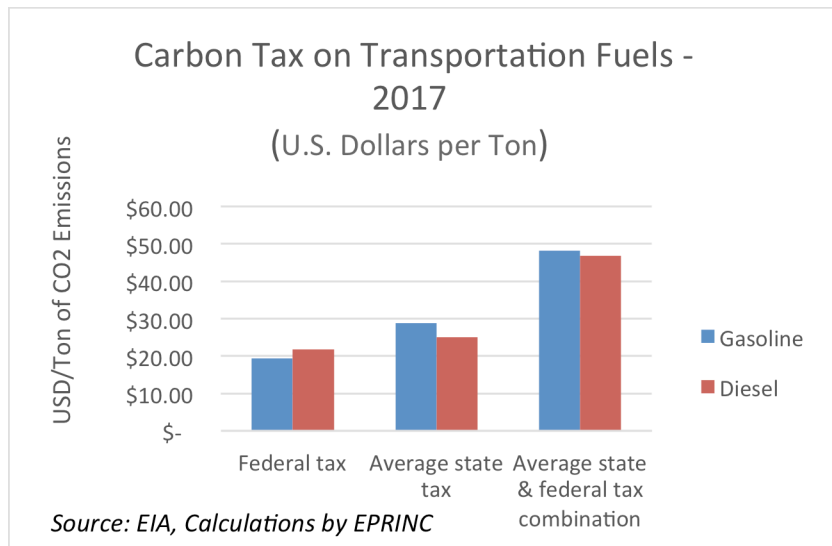


CARBON TAXES ON TRANSPORTATION FUELS

Estimating the Effective Carbon Tax from Excise Taxes

Energy production and consumption in the U.S. face a wide array of subsidies and taxes. For electric power generation, wind and solar power benefit from production subsidies and mandated use requirements through renewable portfolio standards. In the transportation fuels sector ethanol from corn and other renewable fuels must meet mandates for blending volumes into gasoline and diesel fuel. Gasoline and diesel, whether blended with biofuels or not, are taxed by local governments, states, and the federal government at point of sale. For the most part, renewable fuels are heavily subsidized and free of taxes. Proponents of these fuels argue that subsidies are needed for renewable fuels to compensate for existing subsidies on fossil fuels which (presumably) receive generous expensing of costs through the tax system. On balance, fossil fuels still command economic rent (much of it collected by the U.S. government) and renewable fuels often cannot succeed without government support. (1)

Carbon taxes on fossil fuels have often been proposed to bring the social cost of fossil fuel use in line with its private cost. Here the view is that a tax on fossil fuels could, in theory,



reduce fuel use sufficiently to allow society to recover the external costs of using the fuel, i.e., damage to the environment either in local pollution or the emission of heat trapping gasses that alter the climate. The prospective damage to the climate from the use of fossil fuels is subject to considerable uncertainty and debate, hence the uncertainties and disagreements on the appropriate estimate of the social cost of carbon.

However, there is little debate that a carbon tax would generate substantial revenues and it is one of many so-called pay for opportunities to compensate for broad based tax reform.

As policy makers proceed to evaluate whether carbon taxes are an appropriate revenue raising measure or an effective environment policy, it is worth noting that transportation fuels are already taxed. The conventional wisdom that fossil fuels are not taxed clearly does not apply to transportation fuels. One can argue that these taxes should be higher, but as shown in the figure above current local, state, and federal taxes on gasoline and diesel fuel are already approaching \$50 per ton of carbon dioxide emissions. (2)

End Notes

1. Proponents of government support for renewable fuels, such as wind and solar, have argued that subsidies are necessary because the government supports the oil and gas industry through generous expensing of extraction costs for oil and gas production in calculating corporate tax obligations. A long discussion on the incidence of corporate taxes, particularly for extractive industries, is beyond the scope of this assessment. However, economic theory teaches that there are net benefits to the economy as long as the value of the production exceeds costs. We know that for properties owned by the federal government and put up for bid, changes in tax treatment will result in adjustments to bid values, i.e., the government gets more revenues if the effective cost of production is lowered through the tax system. Note that official data from the Department of Interior show that the leasing of oil and gas on federal lands has yielded direct payments to the U.S. Treasury at an average of \$8 billion/year over the last ten years. No such economic rents can be obtained from wind, solar, or biofuels at this time.
2. Calculations were made from data collected by the Energy Information Administration (EIA). The average combined state and federal taxes on gasoline is \$48.24 per ton of carbon dioxide emissions, and a slightly lower number at \$46.77 per ton for diesel. Of course, certain states impose higher taxes for gasoline and diesel fuel use so the averages do not reflect uneven distribution of taxes among the states with higher vs. lower fuel taxes. Combustion of a gallon of E10 produces about 17.68 pounds of CO₂ that is emitted from the fossil fuel content. If the CO₂ emissions from ethanol combustion are considered, then about 18.95 pounds of CO₂ are produced when a gallon of E10 is combusted (EIA data). Taxes per pound are scaled up to estimate CO₂ emissions on a per ton basis.

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