



Clean Water Restoration Fee

Overview and Relationship between the Revenue Source and Water Quality

The revenue source follows a similar rationale to the original Corporate Environmental Income Tax (CEIT), enacted as one component to increase funding for the Superfund Trust Fund more than a decade ago. That tax, which was assessed as a percentage of corporate alternative minimum taxable income above \$2 million, was intended to create the broadest possible base of corporate funding by raising funds from a wide range of companies that may have used and disposed of hazardous substances.

Because the tax is based on a corporation's "alternative taxable income," which is a broader base than regular corporate income (that is, it includes many "tax preference items" that are excluded from the calculation of regular taxable income), it is more fair than a straight surtax on corporate income. The tax applies only above a minimum threshold designed to exclude small businesses from taxation.

The rationale for creating a similar new revenue source to contribute to the clean water trust fund is based on the public goods nature of clean water and the very strong relationship that wastewater treatment bears to clean water. The notion is that since wastewater treatment delivers clean water benefits to virtually all waterways of the nation and that these benefits are openly available to all Americans to enjoy, all America corporations should help pay for them as corporate citizens. This is similar to the argument used to finance other types of government-supplied public goods.

Tax Specifics

This tax is designed to raise roughly \$1 billion annually, which could be achieved through a tax rate of approximately 0.08% (\$8 per \$10,000) of taxable income in excess of a small business threshold. The budget effects of the CEIT were analyzed and presented by the Joint Committee on Taxation. This analysis, reporting the expected revenue, can be used as a baseline to project our contemplated tax using known trends in corporate profits. The previous CEIT tax rate under the Superfund program was 0.12% and the threshold calculated using the alternative minimum tax rules was \$2 million. Excluding the same proportion of today's corporate taxable income base as was excluded originally to exempt small businesses, which accounts for growth in the threshold for small businesses in today's economy, the 2008 base for this tax is estimated at roughly \$1,110 billion and growing at 8.4% annually.

Performance against Evaluative Criteria

This revenue source, with its very broad base, would certainly prove effective in consistently raising the required annual revenue and would be reasonably equitable. It also recreates a well-established mechanism to support a broad-based corporate contribution to address environmental problems that result, in part, from general business activity and that reinstating the tax and applying it to water pollution problems is an appropriate recognition of the priority that should be given to those problems.

This source is administratively simple, with existing revenue collection mechanisms and readily available and collected statistics. The tax base is so broad that it will be almost impossible to predict sources of the resistance to paying new forms of corporate income tax.

"Flushable" Products

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This revenue source includes consumer goods which are typically introduced directly into the wastewater stream following use, contributing to the physical and chemical treatment burden faced by facilities downstream. This consortium of products can be organized into five broad categories. A summary of each is provided below, with the relative contribution to the revenue stream of each under a flat tax scenario.

- *Soaps and Detergents* (25%) – Laundry and dishwashing detergents, toothpastes and gels, and other soaps which add to the chemical treatment burden faced by treatment works.
- *Toiletries* (65%) – Perfumes, shaving and hair preparations, face creams, lotions and sunscreens and other cosmetic preparations which add to the chemical treatment burden faced by treatment works. Many of these products contain metals as active ingredients.
- *Toilet Tissue* (3%) – Retail and industrial packaged toilet and facial tissue.
- *Water Softeners* (1%) - Farm, household, commercial, and industrial water softeners.
- *Cooking Oils* (5%) - Corn oils, soy oils, and other vegetable oils (olive oils, coconut oils, peanut oils, sunflower seed oils, etc). The intention here is to include those which contribute directly to the wastewater stream in a significant way while excluding those which are believed to be consumed primarily as nutritional supplements, salad dressings, or as condiments (such as linseed and cottonseed oil), and those generally used in margarine/shortening production.

Tax Specifics

This tax is designed to raise roughly \$3.5 billion annually, which could be achieved through a tax rate of approximately 6.04% of value of shipments at the producer level, excluding exports. Imports would be taxed at the same level upon entry into the country based on customs value. Taxes would be remitted annually as part of normal corporate tax filing.

It is important to realize that a 6.04% tax at the point of manufacturing will be seen as perhaps a 1-3% increase in consumer prices. That is because between manufacturing and retail sales, there can be several value-adding and/or price-adding steps in the value chain so that a product that costs, say, \$1 to manufacture will end up retailing for \$3-4. Consumers will, therefore, bear some portion of the contemplated taxes, with exact amounts varying depending on the amount of costs passed forward by the manufacturer and the number of value-added steps in the chain to retail.

Based on the latest data available from the US Census and other sources, the 2008 base for this tax is estimated at approximately \$61 trillion and growing at roughly 2.8% annually.

Performance against Evaluative Criteria

All products end up imposing a burden on clean water, although to different extents. Tax rates can be adjusted to approximate this burden.

Products consolidated under this option are generally believed to have low elasticities of demand (as prices increase, consumer demand does not decline in equal proportion) and are viewed as essential staples within most household budgets, helping to assure long-run revenue stability. Product substitution within categories is possible, although these industries as a whole are believed to exhibit relatively high brand loyalties in the American marketplace.

Industrial Discharges

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This revenue source would impose a volume-based tax on industries discharging wastewaters either directly (to surface waters) or indirectly (through municipal wastewater treatment plants). Under a 'polluter pays' rationale, the tax base consists of all facilities in the manufacturing sectors that generate the greatest volume of wastewater. Non-manufacturing sectors, including power plants and other high-volume "clean" water dischargers would not be subject to this tax.

Tax Specifics

The tax is designed to raise roughly \$2 billion annually, through seven escalating tax tiers based on volume of discharge. Round-number estimates include some 300,000 facilities with annual assessments ranging from roughly \$100 for small volume (less than one thousand gallons per day) to roughly \$5,000 for the largest dischargers (greater than one million gallons per day). Taxes would be remitted annually to the U.S. Treasury by individual firms as part of corporate income tax reporting based on a set tax schedule and their own discharge monitoring reports as submitted to their relevant regulator as required under the Clean Water Act. Companies would face fines for late and false reporting as incentives for accuracy and timeliness.

Performance against Evaluative Criteria

Revenues should generally be predictable and stable. Taxes would be low relative to other costs of production, with economic impacts likely to be insignificant for most affected enterprises. Where impacts appear severe, as might be the case for some small businesses, floors can be set to provide relief.

This approach can be said to achieve relatively strong vertical equity (large dischargers are treated differently than small dischargers) and horizontal equity (as a group, all large dischargers are treated equally).

Pharmaceuticals

Overview and Relationship between the Revenue Source and Water Quality

Americans fill more than three billion prescriptions every year. Increases in demand and supply are expected to fuel further growth, as demographics point toward an older populace and more than 100 new prescription and over-the-counter drugs are introduced to the market each year. Significant amounts of prescribed drugs are excreted from the body after use while households, hospitals, and nursing homes routinely dispose of unused or expired pills and liquids through toilets, resulting in their direct introduction into untreated wastewater. Indirect discharges from pharmaceutical manufacturers also end up at municipal wastewater treatment plants. Another significant concern arises from widespread veterinary administration of drugs to livestock and pollutants coming from drainage and liquid manure, which can contain large amounts of animal pharmaceuticals.

While the degree of removal and biodegradation of pharmaceutical compounds during wastewater treatment varies considerably, most pharmaceuticals, including hormones, are not designed to break down easily. They only partially dissolve in water and are designed to have an effect at low dosages with chronic use. While most wastewater treatment processes are effective in significantly degrading common antibiotics and other compounds, chlorination or ultraviolet disinfection is less effective on many types of pharmaceuticals that degrade incompletely or are transformed as a result of wastewater disinfection into other compounds that can have adverse effects.

Concerns over adverse effects involve both human and environmental considerations. There is potential for increased antibiotic resistance in bacteria from residual antibiotics and their metabolites. Synthetic hormones can act as endocrine disruptors by mimicking or blocking hormones and disrupting the body's normal functions and more than 200 species -- aquatic and terrestrial -- are known or suspected to have experienced adverse reactions to endocrine disruptors. Many of the impacts of steroidal estrogen exposure are emerging in the form of male fish with not only lower sperm counts and damaged sperm but feminized characteristics such as producing egg yolk proteins typically made only by females or producing both sperm and eggs. Female fish have also developed male genital organs, and sex ratios in many studies appear to be skewed.

In addition, antidepressants have been found in the liver and brain tissue of fish captured in a creek that receives almost all of its flow from a wastewater treatment plant, and have been shown to have a profound effect on spawning and other behaviors in many aquatic organisms. Calcium-channel blockers (used to relieve chest pain and hypertension) can dramatically inhibit sperm activity in some aquatic organisms. Even at extremely low levels, ibuprofen, steroids, and antifibrotics (used to reduce the development of scar tissue) block fin regeneration in fish.

Finally, a five-month investigation by the Associated Press earlier this year identified pharmaceutical residue in the drinking water of at least 25 major metropolitan areas. While the impacts of these post-treatment residues on humans is less studied than effects on wildlife, it suggests additional efforts to remove pharmaceuticals from drinking water are worthy of further investigation.

Tax Specifics

The tax is designed to raise roughly \$1.5 billion annually, which could be achieved through a tax rate of approximately 0.63% of value of shipments at the producer level, excluding exports. Imports would be taxed at the same rate upon entry into the country, based on customs value. The 2008 base for this tax is estimated at close to \$200 trillion and growing at roughly 10% annually.

Performance against Evaluative Criteria

This revenue source would be effective in raising the required funds and efficient in addressing the producers responsible for the pollution of concern. Although older people account for a disproportionate share of pharmaceutical consumption and are often on restricted budgets, most studies agree the overall elasticity of demand is low for pharmaceuticals given their necessity and lack of available substitutes. This tax would be relatively simple to administer, remitted annually by producers as part of normal corporate tax filing.

Pesticides and Fertilizers

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This revenue source includes a tax on agricultural chemicals. More specifically, the revenue base includes establishments manufacturing phosphatic fertilizers, nitrogenous fertilizers, and pesticides and other agricultural chemicals. If taxed at a flat rate across categories, the relative contribution would be approximately 47% from pesticides, 30% from phosphatic fertilizers, and 23% from nitrogenous fertilizers.

Surface runoff of pesticides into water bodies changes natural ecosystems by killing or damaging a wide variety of organisms. They collect and accumulate in the food chain, becoming more harmful than their ambient concentration would suggest.

Fertilizers, commonly applied in the form of chemical fertilizer or manure, frequently runoff agricultural land and can disrupt natural biological communities by stimulating nuisance weed and algae growth. Excessive plant growth can choke slow moving waters, take up oxygen needed by fish and other aquatic life, and release ammonia which is toxic to fish.

One well known example is the “dead zone” area in the Gulf of Mexico, where commercial and recreational fisheries are threatened by spring pulses of excess nutrients from the Mississippi River watershed. These nutrients stimulate an overgrowth of algae which ultimately decomposes and depletes dissolved oxygen in the water below levels necessary to support life in bottom waters. Research indicates that a near tripling of nitrogen levels entering the Gulf over the past 50 years from human activities has led to a dramatic increase in the size of the dead zone, and current forecasts indicate the summer of 2008 could be the largest on record. Researchers are predicting the area could measure 8,800 square miles, or roughly the size of New Jersey.

Pesticides and fertilizers also impact underground water recharge areas which may contribute to drinking water supplies, especially in areas of intensive application such as animal feedlots. In rural areas and where groundwater is an important source of drinking water, exposure to agricultural chemicals in drinking water may pose human health risks.

One well-documented nitrate contamination concern is infant methemoglobinemia. Infants below the age of six months who drink water containing nitrites in excess of recommended levels could become seriously ill and, if untreated, can die (symptoms include shortness of breath and blue-baby syndrome). The current EPA standard for nitrate-nitrogen for drinking water is specifically designed to protect infants.

Additionally, discharge from fertilizer factories can introduce additional contaminants such as cyanide (causing nerve damage or thyroid problems) and fluoride (causing bone disease and mottled teeth in children).

Tax Specifics

The tax is designed to raise roughly \$1 billion annually, which could be achieved through a tax rate of approximately 2.61% of value of shipments at the producer level, excluding exports. Imports would be taxed at the same rate upon entry into the country based on customs value (foreign trade figures were used to isolate the products actually deployed on domestic soils). Generally speaking, the U.S. imports more fertilizers than it exports, while it exports more pesticides and other agricultural chemicals than it imports.

Corn is the most widely produced feed grain in the United States, accounting for more than 90 percent of total value and production of feed grains. Virtually all commercial corn acreage in the US receives nitrogen fertilizer, making it a suitable context for examining the impacts of the proposed fertilizer tax on market commodity prices. Using the most recently published statistics from the USDA it is estimated that a 2.61% tax on Nitrogen fertilizer would translate to a roughly .07% increase in the per-bushel price of corn if the entire tax is passed through to consumers.

The 2008 base for this tax is estimated at greater than \$30.5 trillion and growing at roughly 11% annually.

Performance against Evaluative Criteria

This revenue source would be effective in raising the required revenue without material demand impacts, and is believed to be an efficient and equitable solution. Several countries have imposed product charges on pesticides and fertilizers. Estimates of price elasticity of demand for these products vary widely, depending on the time period, crops, geographic area, and other factors considered. Even assuming some of the highest elasticities in the literature, however, at the relatively low tax levels contemplated with this tax, effects on demand will be minimal. This tax would be relatively simple to administer, since it would be assessed at the producer level and remitted annually as part of normal corporate tax filing.

Agriculture has been practically exempt from environmental regulation, either through explicit exemptions for agricultural activities, or through laws that allow for farms to escape most or all environmental regulatory impact. Even though agricultural runoff is responsible for the majority of non-point source water pollution in the U.S., most farming practices are specifically exempted from the Clean Water Act.

Bottled Water

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Water purifiers and bottlers rely on clean water as an input to their processes. It is commonly estimated, for example, that municipal sources supply more than 25 percent of domestic bottled water inputs. Moreover, consumers of bottled water tend to be in higher income brackets, where all things equal, individuals have relatively strong willingness to pay for clean water. Bottled water prices vary widely, but retail prices gallon for gallon are typically 20-30 times higher than consumers pay for municipal tap water. The water itself contributes only a small portion of the cost of goods sold, and profit margins are commonly estimated in the 25-30% range. To the extent that Clean Water Trust Fund resources finance watershed protection activities, source waters for this industry will enjoy enhanced protection.

Tax Specifics

The tax is designed to raise at least \$1 billion annually, which could be achieved through a tax rate of the equivalent of 5-cents per bottle. The tax would be levied as a percentage of value of shipments at the producer level for domestically produced waters. Imports would be taxed upon entry into the U.S. based on landed value. The 2008 base for this tax is estimated at roughly 28 billion bottles of water and growing at roughly 8% annually. At 5-cents per bottle, this option is expected to generate \$1.5 billion in gross revenue.

Performance against Evaluative Criteria

Revenues from this source should be predictable and stable, generated from a broad, generally inelastic base of producers. It will likely be spread widely across society, and taxes products not generally deemed to be essential. The option is relatively straightforward administratively, with few collection points and limited new data requirements for auditing and enforcement.

This option is sufficiently effective, as sales volumes appear to be well capable of consistently raising the required annual revenue. Demand is not expected to drop off materially, helping to assure long-run revenue stability. Most research indicates bottled water consumption correlates positively with income level, making it unlikely that impacts will have a disproportional impact on less wealthy segments of the population.

This tax would be relatively simple to administer, since it would be assessed at the producer level. The number of producers is relatively small and total production is highly concentrated, further reducing the overall administrative burden. Taxes would be remitted annually as part of normal corporate tax filing. Sales data are routinely collected and reported, so auditing, if needed, would be straightforward.