



Debate Brief · Carbon Tax

November 10, 2018

Resolved: The United States Federal Government should adopt a carbon tax.

"One problem today is that people think protecting the environment will be so costly and so hard that they want to ignore the problem and pretend it doesn't exist. Humans are capable of amazing accomplishments if we set our minds to it." —Paul Romer, Nobel Laureate Economist

"We need to use economic instruments such as carbon taxes, cap and trade, tax and dividend and whatever else to help incentivize behavior that will move us to a post-carbon, post-animal agriculture world, and make our societies more resilient to the shocks that are already baked into the system." —Dale Jamieson, Prof. Environmental Studies at New York University

"The chief business of the American people is business...the chief ideal of the American people is idealism." —President Calvin Coolidge

"It is much more important to kill bad bills than to pass good ones." —President Calvin Coolidge

USING THE BRIEF

This debate brief was produced by The Calvin Coolidge Presidential Foundation. As you prepare for your debate tournament, use this brief to orient yourself with the topic and to learn some of the key arguments and evidence for and against the resolution. You are not limited to the content and arguments presented in this brief—indeed, we encourage you to think of additional arguments and find your own supporting evidence. We do not encourage you, however, to stray from the intended topic of debate.

BACKGROUND

Many people believe that it is important to undertake some action to neutralize or reduce the effects of climate change. A common concern is that humans are burning too much carbon-based fuels such as coal, oil, and gas, and that this is having a negative effect on our environment, on our health, and on other things that we care about.

One proposed way to achieve a reduction in fossil fuel use is for the federal government to institute a **carbon tax**. A carbon tax is a fee imposed on companies or individuals who burn carbon-based fuels and create carbon dioxide emissions. The companies or individuals who burns those fuels would be required to pay the government a certain amount of money for each ton of CO₂ that they emit. The tax, in effect, acts a penalty or deterrent. The tax causes carbon emissions to become more expensive, which gives companies and individuals a reason to look for a cleaner alternative form of energy to use, which in theory could mean wind power or solar power.

The money that the government receives from the tax could be used for any purpose the government chooses. The money could be used for various environmental-related purposes such as cleaning up the air or rivers, or it could be used for purposes that are completely unrelated to the environment, such as running public schools or supporting national defense. With a new stream of money coming in from a carbon tax, politicians could also decide to reduce other taxes so that the overall tax burden remains the same.

Taxes come in many different forms. A **direct tax** is a tax that is levied on a company's or individual's income. The top source of revenue to the U.S. federal government is a direct tax called the income tax. People who work for a living pay a certain percentage of their earnings to the federal government in this direct tax. Companies (i.e., corporations) pay an income tax, too, called the corporate income tax. The top rate on the corporate income tax is about 35%. An **indirect tax** is a tax levied on a transaction, not a person. A sales tax is often levied by state governments on goods and services people buy. The federal government can levy sales taxes. An **excise tax** is a tax levied on particular goods such gasoline, alcohol, or cigarettes. Sometimes these are goods that the government wishes to discourage the purchase of in some way. The carbon tax is a classic excise tax.

There are other types of taxes, too, such as tariffs, but tariffs will not figure much into the carbon tax debate, because the carbon tax is mainly a domestic proposal that does not entail imports and exports (even though many fuels are imported and exported).

Governments impose taxes for two reasons: 1) to fund government services, and 2) to influence the behavior of people in a country. This brings us to the essence of the question for this debate: should the government institute a carbon tax?

KEY TERMS

Carbon Emissions – The release of carbon dioxide (CO₂) into the atmosphere from the burning of fossil fuels (coal, petroleum, and natural gas). Increased CO₂ levels in the atmosphere increase global temperatures and contribute to climate change through the greenhouse effect.

Tax – A payment that an individual or company is required to make to the government.

Supply – A term in economics that refers to the amount of a good or service that firms offer for sale. The intersection of supply and demand largely determines the market price of a good.

Demand – A term in economics that refers to consumers' willingness and ability to pay for a certain amount of a good or service. The intersection of supply and demand largely determines the market price of a good.

Market Price – The market price is the point where the supply of a good intersects with the demand for that good. This is the price at which a supplier is willing to supply a good, and a buyer is willing to buy a good.

Externality – In economics, an externality is a cost or benefit imposed on someone by a certain good or service, despite that person's non-involvement in the economic transaction of that good or service. An example of a **positive externality**: if a new shopping plaza opens in your city, it may make your property and home more valuable, even though you didn't help pay to build the shopping plaza. An example of a **negative externality**: if someone near you is smoking a cigarette, you may be adversely affected by second-hand smoke, and you aren't being compensated for that unpleasantness.

Carbon Tax – A carbon tax is a form of carbon pricing defined by the Organization for Economic Co-operation and Development (OECD) as “taxes that are directly linked to the level of CO₂ emissions, often expressed as a value per ton CO₂ equivalent (per tCO₂e)”.¹ In other words, the government puts a tax on CO₂ emitting fuels, making them more expensive, in an attempt to decrease their use. From an economic perspective, the carbon tax attempts to cover the social cost of CO₂ pollution that is currently not being factored into the price of fossil fuels.

There is no conclusive data on the revenue a carbon tax would generate. A recent study by the Congressional Budget Office suggests that a carbon tax **would raise \$1.2 trillion** in the first decade.² That same amount, \$1.2 trillion, is the amount that President Obama's recent fiscal proposal aims to reduce the budget by.³

¹"Climate and Carbon Aligning Prices and Policies." *Organisation for Economic Co-operation and Development*. N.p., Oct. 2013. Web. 28 Jan. 2016.

<http://www.oecdlibrary.org/docserver/download/5k3z11hjg6r7.pdf?Expires=1454099441&id=id&accname=guest&checksum=EAF1D85B2C76E8C3FA9E955D74F503F0>

² "Effects of a Carbon Tax, Congressional Budget Office, <https://www.cbo.gov/publication/44223>

³ Obama Budget would shrink deficits by \$1.2 trillion over 10 years." (Reuters March 12, 2015)
<http://www.reuters.com/article/us-usa-budget-obama-idUSKBN0M81WP20150312>

Cap and Trade – A form of carbon pricing different than a carbon tax, where the government sets a limit to the overall amount of CO₂ (or other pollutant) that can be emitted into the environment **by everyone**. The government then sells or auctions emission permits to firms, which can be sold in secondary markets as “carbon credits”. The value of these credits is determined by their supply - as set by the government, and the demand to pollute - which is determined by the firms. Over time the government lowers the emission cap until it reaches what is considered an optimal level of emission reduction.

Pigouvian Tax (pi-GOO-vee-yan) – A tax levied on a good or activity that imposes a negative externality. The Pigouvian tax rate is set by the government at a level that in theory is equal to the social cost of the externality so that the people directly buying and selling the good or service that creates the **negative externality** pay for the previously unaccounted costs. Thus, with the tax in place, the good or service becomes more expensive to better reflect the entirety of the cost that the good or service imposes on society. By increasing the price, the government gets money, and the use of the good or service is decreased to an optimal level. The carbon tax is a classic example of a Pigouvian tax.

Arthur C. Pigou (pi-GOO) – A famous English economist who developed the idea of the Pigouvian Tax.

Command and Control (CAC) – Command and control simply refers to direct government regulation of an industry or activity. An example of CAC would be passing laws that only allow certain industries to emit a stated amount of CO₂. Unlike the previous two forms of regulation, CAC does not use pricing incentives to decrease emissions.

Social Cost of Carbon (SCC) – An estimate of the long term economic damages resulting from an increase of CO₂ emissions.

Gross Domestic Product (GDP) – The total market value of all finished goods and services produced within a country’s borders during a specific period of time. When economists talk about economic growth, they often are referring to the rate at which gross domestic product increases or decreases.

Progressive tax – A tax where the tax rate increase as the taxable amount of money increases. This means that under a progressive tax system, lower income earners are taxed at lower rates than higher income earners.

Regressive tax — A regressive tax is the opposite of a progressive tax. It hits lower earners harder than others. For lower income people, the costs of everyday goods such as food, gas, and housing, are a larger part of their income relative to people with higher incomes. Therefore, taxes on those items are regressive. For a rich individual, even a high tax may not be very burdensome, but for a person with lower income, that tax might make a good too expensive to buy. Carbon taxes are not levied on individuals directly but many of the things consumers buy contain carbon, so a carbon tax would cause the cost of those good to go up.

AFFIRMATIVE ARGUMENTS

"We must have no carelessness in our dealings with public property or the expenditure of public money. Such a condition is characteristic either of an undeveloped people, or of a decadent civilization. America is neither." – Calvin Coolidge

1. **Climate change is an urgent problem that is our responsibility to solve.** According the United States Environmental Protection Agency (EPA), global temperatures have increased by an average of 0.15°F per decade since 1901.⁴ While this may not seem like a large increase, even small increases in temperature can have huge impacts on the planet by changing weather patterns, altering or destroying ecosystems, and raising sea levels. While the earth naturally experiences fluctuations in temperature over time, human activity, specifically, the emission of CO₂ into the atmosphere from burning carbon-based fuels, has contributed to an unnatural state of global warming.⁵

Key Fact

Global temperatures have increased by an average of 0.15°F per decade since 1901.

These changes in temperature and climate are not only damage the environment, they also disrupt the current and future world economy. **A study published in the journal Nature predicts that by 2100, climate change will reduce average global incomes by 23% relative to what they would have been without climate change.**⁶ Climate change will have a profound effect on agriculture and livestock by changing growing seasons and conditions, which, in turn affect other industries. Rising sea levels are likely to have a negative effect on coastal industries and settlements. Climate change will make overall conditions less predictable and adapting to these conditions will be costly. Current carbon prices do not reflect the damages that emissions do to the economy and the environment. The carbon tax will remedy this.

We only have one planet, and it is entrusted to us that we will care for it. As President Coolidge himself warned, we must be careful in how we treat our property.

2. **The carbon tax would raise revenue.** The U.S. national debt stands at a staggering \$19 trillion. What is more, our annual federal budget deficits are projected to continue to grow in the future. We won't be able to afford to pay for the social programs our grandchildren will need. The carbon tax is a partial solution – it would raise significant revenue, even perhaps \$1.2 trillion, according to the Congressional Budget Office.⁷

⁴ *Climate Change Indicators in the United States, 2014.* N.p.: n.p., n.d. U.S. Environmental Protection Agency. 2014. Web. 28 Jan. 2016. <http://www3.epa.gov/climatechange/pdfs/climateindicators-full-2014.pdf>

⁵ B, D. "Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis." *SPM 1* (2013): n. pag. Web. 28 Jan. 2016. http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf

⁶ Burke, Marshall, Solomon Hsiang, and Edward Miguel. "Global Non-linear Effect of Temperature on Economic Production." *Nature.com*. Nature Publishing Group, 12 Nov. 2015. Web. 28 Jan. 2016. <https://www.nature.com/articles/nature15725.epdf>

⁷ "Effects of a Carbon Tax, Congressional Budget Office, <https://www.cbo.gov/publication/44223>

Right now, excise taxes are not a big part of federal revenue. It is estimated that in 2018, revenues from excise taxes will make up only about 3.1% of all federal revenue (see Appendix A).⁸ Increasing this amount by adding a new excise tax—a carbon tax—does not seem unreasonable and would provide much-needed revenue. Implementing a carbon tax is a great way to simultaneously raise money for the government and receive environmental benefits.

3. **Adopting a carbon tax would significantly reduce carbon emissions.** A carbon tax will increase the price of CO₂-emitting fuels, which will lead to a decrease in the amount of these fuels that people buy and burn. This will lead to an overall reduction in the amount of CO₂ in the atmosphere and help reverse the effects of climate change.

Carbon emissions represent a negative externality because they harm the environment. This tax increases the price of carbon to a more accurate price level that includes the negative effects of carbon on society. The higher carbon price will lower the demand for carbon, and therefore help reduce climate change, making us all better off.

The experience of British Columbia, a province in Canada that enacted a carbon tax in 2008, shows that introducing a carbon tax can be a successful policy. A 2015 study by the Nicholas Institute at Duke University, reviewed earlier analyses on British Columbia's carbon tax and found the tax had reduced not only per capita greenhouse gas emitting fuel consumption, but also decreased the overall amount of emissions. **The degree to which the effect was measured varied between studies but was generally a 10% to 20% reduction in consumption of fossil fuels and between a 5% to 15% reduction in emissions.**⁹

It is especially important to understand how a tax of this nature would affect the emission levels of a large economy, such as the United States. A study by the Brookings Institution predicted that a carbon tax would lead to a very substantial reduction in carbon emissions in the United States, decreasing cumulative carbon levels by 60% from 2008 to 2040.¹⁰

4. **The carbon tax can help the U.S. economy by replacing other, more harmful, taxes.** Not all taxes are created equal. Economists generally believe that some taxes are more detrimental to economic growth than others. The income tax and corporate income tax are thought especially bad for economic growth. After all, taxing workers' incomes makes them less likely to want to work more since they cannot keep as much of the fruits of their labor. Rather than discouraging people from working, the carbon tax discourages people from using carbon. It is good to discourage the use of carbon because carbon emissions contribute to harmful climate change.

⁸ Tax Policy Center, Historical Revenues by Source," (4-4-15)

<http://www.taxpolicycenter.org/taxfacts/displayafact.cfm?DocID=204&Topic2id=20&Topic3id=21>

⁹ Murray, Brian, and Nicholas Rivers. "British Columbia's Revenue-Neutral Carbon Tax: A Review of the Latest "Grand Experiment" in Environmental Policy." (n.d.): n. pag. *Duke Nicholas Institute*. May 2015. Web. 28 Jan. 2016. https://nicholasinstitute.duke.edu/sites/default/files/publications/ni_wp_15-04_full.pdf

¹⁰ McKibbin, Warwick, Adele Morris, and Peter Wilcoxen. "Subsidizing Energy Efficient Household Capital: How Does It Compare to a Carbon Tax?" *Brookings*.

http://www.brookings.edu/~/media/research/files/reports/2010/10/25-energy-subsidy-mckibbin-morris-wilcoxen/1025_energy_subsidy_mckibbin_morris_wilcoxen.pdf

<p>Key Fact</p> <p>The carbon tax could replace more harmful taxes such as income and sales taxes.</p>	<p>A recent article in from the <i>Weekly Standard</i> by economist Ike Brannon explains how implementing a carbon tax could provide revenue to the government, thereby allowing the government to reduce or eliminate more harmful taxes like the income tax.¹¹ Does it not make more sense to tax something that we actually want to discourage (such as carbon emissions) rather than things that are essential for economic growth?</p>
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When British Columbia implemented its carbon tax, it reduced tax rates on its corporate and personal income taxes. A study from the University of Ottawa found that over the four years following the implementation of the carbon tax, British Columbia's economy performed slightly better than the rest of Canada.¹²

Scholars at the Brookings Institution have estimated the effect of a carbon tax on the U.S. economy, compared to government subsidies for green, household energy. Their model assumes that the carbon tax starts at \$30 per ton of CO₂, increases by 5% each year, and only applies to fossil fuels used in energy production. Rather than introducing new tax reforms, the government returns all revenue from the carbon tax to households in the form of lump sum payments. They found that if the United States imposed a carbon tax in this way, **the tax would have a very minimal impact on the growth rate of the economy over the long-term and would decrease emissions by 60% over 33 years** (compared to inaction). While it would adversely affect economic growth to some small extent in the short-term, it is the long-term that should be of most interest to policymakers and citizens alike.¹³

By offsetting the negative impacts of the carbon tax with reductions in other, arguably more damaging taxes, the carbon tax will have a minimal negative, if not positive, impact on the economy as a whole. At the same time, the carbon tax will do much to solve another major problem: climate change.

5. **A carbon tax will encourage the use and development of cleaner energy alternatives.** As the carbon tax increases the cost of fossil fuels, demand for cleaner substitutes such as wind, solar, nuclear, and hydropower will increase. Greater demand for renewable energy will create larger profits and thus encourage more firms to enter the renewable energy market. This will create more competition and help spur innovation and new ideas which will lead to further improvements in the efficiency and cost-competitiveness of renewable-energy alternatives.

¹¹ Brannon, Ike. "No More Denali Commissions." *Weekly Standard*. N.p., 14 Sept. 2015. Web. 28 Jan. 2016. <http://www.weeklystandard.com/no-more-denali-commissions/article/1028741>

¹² Elgie, Stewart, and Jessica McClay. "BC's Carbon Tax Shift Is Working Well after Four Years (Attention Ottawa)." *Canadian Public Policy* (2013): n. pag. Web. 28 Jan. 2016.

<http://www.utpjournals.press/doi/pdf/10.3138/CPP.39.Supplement2.S1>

¹³ (McKibbin, 2015)

Since renewables are newer forms of energy they currently need more investment to become competitive with fossil fuels. According to a 2013 report by the U.S. Energy Information Administration (EIA), the federal government subsidized renewable electricity-related sources to the tune of \$38 billion in 2010.¹⁴ Yet, investment does not have to be funded by taxpayers through government subsidies. In fact, investment in renewables would likely be more effective if it was coming from the private sector. The carbon tax will make fossil fuels more expensive and therefore give consumers a natural incentive to use alternative fuels. This new demand for renewables will help spur new innovation and investment that is needed to fully develop renewables as viable energy sources for the future. A carbon tax would further encourage more investment and innovation in high productivity, low emissions energy sources.

Key Fact

The US Federal Government subsidized renewable electricity-related sources to the tune of \$38 billion in 2010.

6. **The carbon tax is fair.** CO₂ emissions are not localized. They seep into the atmosphere, affecting everyone on the planet. It is unfair that those who produce and use fossil fuels do not bear the costs associated with the damage that CO₂ emissions do to the environment. The carbon tax remedies this by including the cost of these damages in the tax so that the price of fossil fuels accurately reflects the damage they cause.
7. **The carbon tax will only have a minimal effect on gasoline prices.** One concern with the carbon tax is that it will lead to higher gasoline prices that will especially hurt everyone, and especially those with lower incomes. However, the empirical evidence in British Columbia shows that this impact is fairly minimal. **The increase in gas prices from the tax work out to only be “7 cents of the C\$1.35 per liter Vancouver residents”** payed in 2012, according to an article in *The Economist*.¹⁵ What is more, gas prices tend to be highly volatile anyway. Geopolitical events would probably have a bigger impact on gas prices than a carbon tax.
8. **The carbon tax is better than other forms of environmental regulation.** In 2009, while introducing the “Clean Energy Jobs and Power Act” then U.S. Senator John Kerry stated, “I don't know what 'cap and trade' means. I don't think the average American does.”¹⁶ Kerry's statement highlights the confusion and misinformation that often surround legislation that addresses carbon emissions. Compared to other regulatory policies, such as “cap and trade” models and “command and control” regulations, the carbon tax has the advantage of being more understandable, transparent, and predictable (and thus, better for the economy).

¹⁴ Schipper, Mark. "Direct Federal Financial Interventions and Subsidies in Energy in Fiscal Year 2013." (2015): n. pag. *U.S. Energy Information Administration*. Web. 28 Jan. 2016.

<https://www.eia.gov/analysis/requests/subsidy/pdf/subsidy.pdf>

¹⁵ "The Evidence Mounts." *The Economist*. The Economist Newspaper, 31 July 2014. Web. 28 Jan. 2016.

<http://www.economist.com/blogs/americasview/2014/07/british-columbias-carbon-tax>

¹⁶ Samuelsohn, Darren. "Boxer, Kerry Set to Introduce Climate Bill in Senate." *The New York Times*. N.p., 28 Sept. 2009. Web. 28 Jan. 2016. <http://www.nytimes.com/cwire/2009/09/28/28climatewire-boxer-kerry-set-to-introduce-climate-bill-in-43844.html>

Government policies, such as energy subsidies and regulations, are more likely to result in inefficient allocations of resources both from the side of firms and the government than a carbon tax. William Nordhaus, a Yale economist and a 2018 Nobel Prize winner, has studied climate policies for decades. He argues that of all the ways to deal with climate change, the best is to require governments, corporations, and households to pay a tax on their carbon emissions. Nordhaus: “Today [the price of burning carbon] is virtually zero. If the price were higher, people would have other choices, like renewable energies.”¹⁷

Finally, whereas the carbon tax raises money for the government, environmental regulation and oversight carries with it costs of enforcement. The latest federal attempt at addressing climate change, the “Clean Power Plan,” was estimated in a report by NERA Economic Consulting to increase total energy expenditure by up to \$292 billion from 2022 to 2033.¹⁸ In contrast, the carbon tax would generate revenue for the government rather than require government spending.

Key Fact

Relying on the Environmental Protection Agency (EPA) to regulate emissions is expensive. The EPA’s budget is about \$8 billion per year.

¹⁷ “William Nordhaus, father of climate change economics, wins Frontiers of Knowledge Award” Frontiers of Knowledge, BBVA. <https://www.bbva.com/en/father-climate-change-economics-wins-frontiers-knowledge-award/>

¹⁸ “Energy and Consumer Impacts of EPA’s Clean Power Plan.” (2015): n. pag. *NERA Economic Consulting*. 7 Nov. 2015. <http://www.americaspower.org/wp-content/uploads/2015/11/NERA-CPP-Final-Nov-7.pdf>

NEGATIVE ARGUMENTS

"The collection of taxes which are not absolutely required, which do not beyond reasonable doubt contribute to public welfare, is only a species of legalized larceny." – Calvin Coolidge

- 1. Climate change is not an urgent problem; therefore, we don't need a carbon tax.** If you believe that we need a carbon tax, you are also assuming that: a) climate change is a serious and urgent problem; b) climate change is caused by man-made CO₂ emissions; and c) a carbon tax will actually lower CO₂ emissions sufficiently to halt climate change. Those are big assumptions, and the science is not completely settled on all three points.

The fact is there are many things that affect the average temperature of the planet and human activity is only one of them. The Earth has experienced naturally-occurring fluctuations in global temperature for billions of years, long before humans could have possibly made an impact on CO₂ levels. Even if one accepts that heightened CO₂ levels from human activity are increasing global temperatures, there is no evidence that this is exclusively a bad thing. Of course changing conditions will have negative impacts on some species and regions, but they also may have positive impacts on others.

As climate conditions change, life on earth changes with it—and so do the economic implications. Areas that once were too cold or dry for agricultural production may become important food producing areas. Until we observe the results of climate change, it is impossible to know exactly what the costs or benefits might be.

- 2. Carbon taxes hurt the engine of economic growth.** It is important to remember that our government lives off the private economy, not the other way around. Raising taxes hurts the economy. America is desperate to achieve faster economic growth. Following the Great Recession of 2008-09, economic growth has averaged only around 2% per year in the U.S. Yet, historically since the end of World War II, economic growth has averaged close to 3% per year and in many years economic growth has surpassed even 4% per year. During the years when Coolidge was president, the economy often grew more than 4% per year. Economic growth exceeded 4% also several years during the 1990s under the Bill Clinton administration.¹⁹ A carbon tax will be yet another tax that slows the economy during a time when we desperately need faster growth.

Key Fact

On study estimated that by 2030, the act if implemented would result in: a decrease of GDP by over \$600 billion, the loss of up to 4 million jobs, gas prices shooting up to \$5.67 per gallon, and total energy expenditures increasing up to 114.5%

Also, carbon reduction efforts generally hurt the economy. Analyzing the proposed "America's Climate Security Act of 2007," a national cap and trade system for greenhouse gas emissions, a

¹⁹ Current-Dollar and "Real" Gross Domestic Product." Bureau of Economic Analysis.
<http://www.bea.gov/national/index.htm#gdp>

report by the American Council for Capital Formation and the National Association of Manufacturers estimated that by 2030, the act, if implemented, would result in: a decrease of GDP by over \$600 billion, the loss of up to 4 million jobs, gas prices shooting up to \$5.67 per gallon, and total energy expenditures increasing up to 114.5%.²⁰ While this is for a cap-and-trade plan rather than a carbon tax, it is strong evidence that regulating emissions through pricing incentives is harmful to the economy.

3. **The carbon tax will make all products more expensive.** Many carbon tax supporters assume that the tax will be charged to the producers of the carbon emitting fuels, rather than the consumers. However, producers make up for increased costs by increasing prices for consumers. Fuel producers would therefore pass along at least a large portion of the increase in costs via the carbon tax to consumers through higher fuel prices. This will not only directly increase the cost of fossil fuels, but will also indirectly increase the cost of nearly all goods and services within the economy due to the fact that fossil fuels are used in the production and transportation of nearly all goods and services. Keep in mind that electricity is most commonly produced by burning fossil fuels.

The experience of Australia shows how implementing a carbon tax leads to increased costs for consumers. After Australia implemented a carbon tax in 2012, according to Australian Department of the Environment, households experienced an estimated \$9.90 increase in the per-week cost of living and a 0.7% increase in the Consumer Price Index (CPI), which measures the general level of prices in the economy.²⁰ Within two years, Australia had repealed its carbon tax. By repealing the tax, the Australian Department of the Environment estimated that monthly household electric bills would decrease by \$200 and gas bill would decrease by \$70.²¹

Key Fact

According to Australian Department of the Environment, households experienced an estimated \$9.90 increase in the per-week cost of living after the implementation of a carbon tax.

In the U.S., the increase in the cost of goods resulting from a carbon tax would not affect all citizens equally. States like Texas, Wyoming, Pennsylvania, and West Virginia produce a disproportionately large amount of energy compared to other states. In fact, in 2013 these four states alone accounted for more than 40% of the US's total energy production.²² A carbon tax would have a particularly devastating effect on those states' economies.

²⁰ "Analysis of The Lieberman-Warner Climate Security Act (S. 2191) Using The National Energy Modeling System." (n.d.): n. pag. Web. 28 Jan. 2016. http://acfc.org/wp-content/uploads/2013/04/media_190.pdf

²¹ "Repeal of the Carbon Tax: Impacts on Households and Businesses" *Australian Government Department of the Environment*. Web. 28 Jan. 2016. https://www.environment.gov.au/system/files/pages/59388d77-a9b5-4e4c-87b7-d732baf7c45b/files/factsheet-impacts-households-and-businesses_0.pdf

²² "U.S. Energy Information Administration - EIA - Independent Statistics and Analysis." *U.S. Energy Information Administration*. N.p., n.d. Web. 28 Jan. 2016. <http://www.eia.gov/state/>

- 4. Carbon taxes are regressive and thus hurt poor people the most.** Carbon taxes are regressive: they disproportionately impact the poor because the poor spend a larger percentage of their incomes on energy. The rich may have no problem paying higher heating bills, but for America's poor, higher energy costs are a serious burden. A 2009 paper from the National Bureau of Economic Research suggests that the burden on the poorest household doubles when emissions are taxed directly.²³ CO₂ emitting fossil fuels are good for the poor among us because they are cheaper, more efficient, and more predictable than alternative forms of energy. We shouldn't make the cheapest form of energy more expensive with a tax.

Key Fact

One study from the National Bureau of Economic Research found the burden on the poorest households doubles when emissions are taxed directly.

- 5. The carbon tax will put the U.S. at an international disadvantage.** The United States is currently one of the top producers of energy around the world. As of 2014, we were the number one producer of petroleum and natural gas (2013) and the number two producer of coal (2013) and electricity (2012).²⁴ Clearly, energy production from fossil fuels is a very important part of the American economy. By taxing one of the most important industries, the carbon tax puts the entire U.S. economy at a disadvantage in the global marketplace.

The carbon tax poses two problems for American fossil fuel producers operating on a global scale.

First, it creates an incentive for American consumers to buy cheaper, non-taxed, foreign fuel instead of taxed American fuel. The experience of British Columbia, Canada, which has implemented a carbon tax, proves instructive. Evidence shows that citizens of British Columbia who live near the U.S. border regularly cross the border into Washington state in the U.S. to purchase gas, thus escaping their province's carbon tax.²⁵

The second problem is that firms wishing to export American fuel will have to compete with international non-carbon-taxed prices. To remain competitive, American energy companies might opt to relocate to other countries to avoid the carbon tax, taking American jobs with them. Firms outside the energy sector might do this as well, as a carbon tax would increase their production and distribution costs. Not only would actions like these damage the U.S. economy, but they would also decrease the effectiveness of the tax on emission reductions since these firms would still be polluting, just in a different location.

²³ "Who Pays a Price on carbon?" NBER Working Paper 15239.

<http://www.nber.org/digest/jan10/w15239.html>

²⁴ "U.S. Energy Information Administration - EIA - Independent Statistics and Analysis." *U.S. Energy Information Administration*. N.p., n.d. Web. 29 Jan. 2016. <http://www.eia.gov/beta/international/>

²⁵ Murphy, Robert, Patrick Michaels, and Paul Knappenberger. "The Case Against a Carbon Tax." (n.d.): 127-42. CATO Institute. 4 Sept. 2015. Web. 28 Jan. 2016. <http://object.cato.org/sites/cato.org/files/pubs/pdfs/cato-working-paper-33.pdf>

- 6. A carbon tax will likely increase our tax burden overall. It is unlikely that politicians will reduce other taxes in response.** Proponents of a carbon tax often argue that the federal government could substitute a carbon tax for an income tax. They even concede that a carbon tax is, in theory, probably less bad for the economy than an income tax.

However, tax reform is very politically charged and difficult to pull off. There is no guarantee that in adopting a carbon tax we will get a reduction in some other tax. Furthermore, the carbon tax almost certainly would not produce enough revenue to totally eliminate the income tax. The carbon tax will most likely end up as one more tax that Americans have to pay. President Coolidge warned strongly against taxing Americans too much. He said: "The collection of taxes which are not absolutely required...is only a species of legalized larceny."

- 7. How can the government possibly know at what rate to set the carbon tax?** The carbon tax attempts to include the negative costs of pollution, which are currently not being included, into the price of goods and services. The EPA defines these costs as "an estimate of the economic damages associated with a small increase in carbon dioxide (CO₂) emissions, conventionally one metric ton, in a given year."²⁶

There are many problems in determining the cost of these economic damages. One is that we do not know what damage will actually occur from climate change. Another is we do not know how much these effects will cost various people in various regions. For instance, the social cost of a large coastal city flooding from rising sea levels is much higher than an uninhabited island becoming submerged. As the climate changes, we will see shrinking glaciers, shifting plant and animal ranges, earlier flowering of trees, increasing sea levels, and more intense heat waves.²⁷ But how can we possibly put an accurate price tag on these occurrences?

Social and environmental scientists have constructed complicated theoretical models, but as economist Robert Pindyck of the Massachusetts Institute of Technology explains, these models are far from perfect:

"The modeler has a great deal of freedom in choosing functional forms, parameter values, and other inputs, and different choices can give wildly different estimates of the SCC and the optimal amount of abatement. You might think that some input choices are more reasonable or defensible than others, but no, 'reasonable' is very much in the eye of the modeler. Thus these models can be used to obtain **almost any result one desires.**"²⁸ (emphasis added)

If there is to be a carbon tax, then the rate must be set appropriately. But it is entirely unrealistic to assume that even the best experts can know what this rate should be due to the unknowable nature of future events.

²⁶ "The Social Cost of Carbon." U.S. Environmental Protection Agency. N.p., n.d. Web. 28 Jan. 2016. <http://www3.epa.gov/climatechange/EPAactivities/economics/scc.html>

²⁷ "Global Climate Change: Effects." Climate Change: Vital Signs of the Planet. N.p., n.d. Web. 28 Jan. 2016. <http://climate.nasa.gov/effects/>

²⁸ Pindyck, Robert. "Climate Change Policy: What Do the Models Tell Us?" *Journal of Economic Literature* (2013): n. pag. Web. 28 Jan. 2016. <http://web.mit.edu/rpindyck/www/Papers/PindyckClimateModelsJELSept2013.pdf>

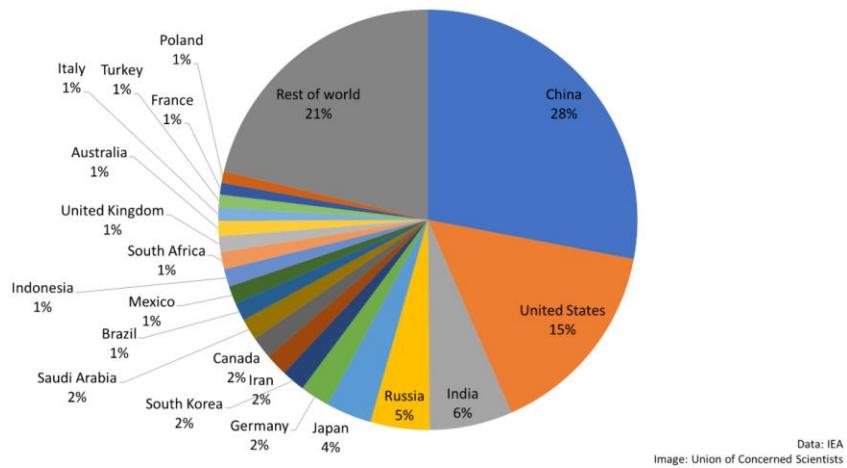
Furthermore, it is important to keep in mind that governments are political bodies. Even if the government could somehow know the optimal tax rate to reduce carbon emissions, it might respond to political interests when setting the policy, rather than relying on science. The government might make the rate much higher than necessary to collect more revenue for itself, or it might make it too low, in which the tax does no environmental good.

- 8. If other countries do not do their part, the change in U.S. emissions will be too small to make a difference.** Climate change is a world encompassing problem. For a carbon tax to make a significant impact on atmospheric CO₂ levels, other countries must also adopt measures to reduce emissions. If only one country implements the tax, then the overall impact on emissions would be relatively small and the impact on climate change negligible.

The U.S. is responsible for only 15.5% of worldwide emissions (see Figure 1).²⁹ Even if the U.S. were to eliminate *all* of its own carbon emissions, the impact on total world-wide carbon emissions would be small if other countries do not also reduce emissions. Countries cannot force other countries to reduce emissions and international agreements in the past have failed to effectively bind countries to agreements to curb emissions. The 2015 Paris Agreement failed to lay out enforcement mechanisms if countries do not meet their emissions quotas, instead relying on international peer-pressure, which does not require nations to do anything.³⁰

There is a real threat that other countries such as China, India, and Russia, will not do their part. In such a case, if a country implements a carbon tax they will have hurt their economy while doing practically nothing to combat climate change.

Figure 1. Share of global carbon dioxide emissions from fuel combustion (2015)²⁹



²⁹ Union of Concerned Scientists, <https://www.ucsusa.org/global-warming/science-and-impacts/science/each-countrys-share-of-co2.html#.W8Jr42hKjic>

³⁰ Nations, United. "ADOPTION OF THE PARIS AGREEMENT." (n.d.): n. pag. 12 Dec. 2015. Web. 29 Jan. 2016. <http://unfccc.int/resource/docs/2015/cop21/eng/l09.pdf>

APPENDIX A: The Tax Base

The United States government gets money from a variety of sources. Together the revenue that is raised from those sources is referred to as “the tax base.” That revenue is important if the government is going to pay for the various programs and services that it runs. In recent years, the federal government has run an annual budget deficit, which means that the government spends more money than it takes in.

Some of the components of the tax base are much bigger than others. The relative size of each component also changes over time, as politicians vote to make some taxes go up and others go down.

If you add an excise tax such as a carbon tax, the overall tax base increases. If you were to add a carbon tax but reduce some other tax by about the same amount, it is possible to keep the overall tax base the same while getting the benefits that a carbon tax gives in terms of changing people’s behaviors.

Federal Government Receipts as a Percent of Total from 1934 to 2018 (selected years)

Historical Context	Year	Individual Income Taxes	Corporate Income Taxes	Social Insurance	Excise Taxes	Other
Shortly after Coolidge left office	1934	14.2%	12.3%	1.0%	45.8%	26.7%
During World War II	1944	45.0%	33.9%	7.9%	10.9%	2.2%
During the post-war growth period	1957	44.5%	26.5%	12.5%	13.2%	3.3%
During the space race of the 1960s	1968	44.9%	18.7%	22.2%	9.2%	5.0%
During the slowdown of the 1970s	1978	45.3%	15.0%	30.3%	4.6%	4.8%
During the Reagan administration	1985	45.6%	8.4%	36.1%	4.9%	5.0%
During the Clinton administration	1994	43.1%	11.2%	36.7%	4.4%	4.6%
During the Obama administration	2010	41.5%	8.9%	40.0%	3.1%	6.5%
The present (estimated)	2018	49.8%	11.3%	32.2%	3.1%	3.6%

Source: Tax Foundation, <https://taxfoundation.org/federal-tax-revenue-source-1934-2018/>