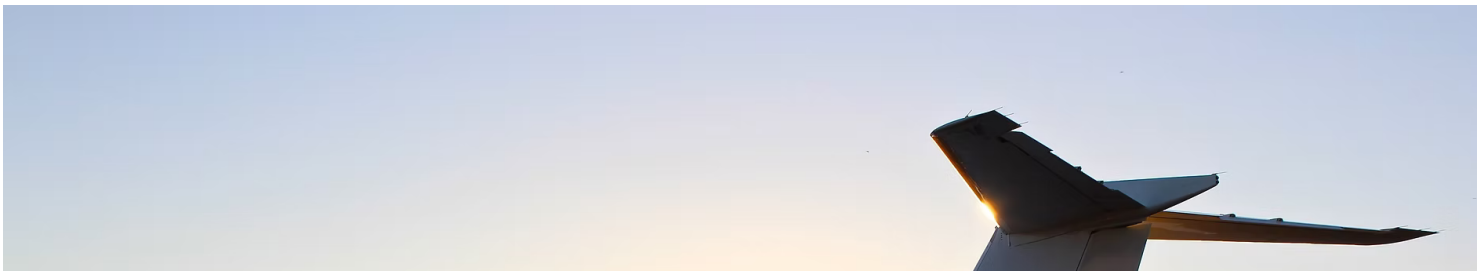
David Wolfe Bender · Aug 5, 2022 · 10 min read

The Private Jet Problem: the Market-Oriented Climate Policy We Need



A private plane is seen on a tarmac at Napa County Airport (Photo Credit: Chris Leipelt, Unsplash)

Earlier this month, various celebrities drew criticism for their frequent use of private jets. One of those celebrities was Taylor Swift, my favorite artist. (Don't believe me? Each year, I calculate how much Taylor Swift music I listened to, and it's *a lot*: in 2021, the number hit 184 hours.).

Private jets are status symbols, often accessible only to top earners. They're becoming increasingly popular, and demand is staying consistent despite increasing fuel prices and staff

shortages. But they're also terrible for the environment, as almost any progressive voter with a Twitter account quickly opined last week. The environmentalists definitely make a strong case, and the facts back them up.

Because private jets carry far fewer passengers, the carbon emitted per passenger is significantly higher than that of a large passenger jet, some of which carry 150 to 300 passengers on domestic flights. Swift's private jet use – which topped the list of Yard's "Worst Private Jet Emissions" list – is the subject of criticism from environmentalists and conservationists.

Now, to be fair to the greatest artist to ever touch the face of the earth, a spokesperson for Swift told the Washington Post that her jet is "loaned out regularly to other individuals" and that attribut[ing] most or all of these trips to [Swift] is blatantly incorrect."

This article is not meant to attack Swift or any other private jet user; I find that discourse to be unproductive and uninteresting. Instead, policy analysts should use this incident to consider how the United States and other major economies should adapt its policies to consider the effect private jets have on climate change.

Let's start with some context: this problem is not new. The attacks on private plane travel did not start with Taylor Swift (by the way, did I mention that she's won 11 Grammy Awards? And counting!). Amazon founder Jeff Bezos earned criticism in November 2021 for flying to an environment summit on a private plane, and there is an entire Twitter account dedicated to Elon Musk's private flights (Musk really doesn't like that account).

Why Private Jets are Bad for the Environment

It feels obvious, but it's actually a little more complicated than one might think. There are three distinct problems.

Problem #1: Private jets often fly empty

Private planes often need "to reposition or return for a charter," which means they often fly empty. These empty flights are referred to as "empty legs." Some charter companies have started to sell these empty-leg flights to consumers at a discount, hoping to make any money on an empty flight. However, many of them continue to lack passengers.

Drake, the famous rapper, recently tried to defend his private jet's frequent use by saying his plane often flew empty. (I thought I didn't have to say this, but clearly Drake's publicity team doesn't know, so I'll make it clear: the plane emits carbon with or without passengers on board).

Flying empty for no real utility means the carbon emitted per passenger for flights *with* utility dramatically increases.

Anecdotally, this makes sense. Let's say you want to fly from New York to Charlotte, so you charter a Dassault Falcon 7X that is – unbeknownst to you – currently in Chicago (for what it's worth, that's the same type of plane that Swift owns). The plane will fly empty from Chicago to New York to pick you up before you board and fly to Charlotte. Your nominal emissions in metric tons is 6.34 mT (which only includes the leg from New York to Charlotte), but your *real* emissions output includes the empty flight, which adds another 6.85 mT for a total of 13.19 mT.

Departure	Arrival	Flight Hours	Burn Rate (Gal/Hr)	Emissions (LBS)	Emissions (mT)	Passengers	EPP	*Multiplier*	
Chicago, IL	New York, NY	2.25	318.00	15097.05	6.85	0	UNDEFINED		
New York, NY	Charlotte, NC	2.08	318.00	13976.51	6.34	1	6.3397		NOMINAL
TOTAL PRIVATE TRIP — Single-Passenger Trip					13.19	1	13.1877		REAL
New York, NY	Charlotte, NC	2.08	750.00	32963.48	14.95	162	0.0923	68.688	
								142.8829112	

Figure 1: Single-passenger private trip vs. maximized commercial flight

Problem #2: Private jet capacities are intentionally low

Private jets – by their nature – have a small capacity. For example, Swift's jet carries eight passengers. Lower capacity for jets means the emissions per passenger is understandably higher, as fewer people are flying.

Let's return to our hypothetical: we will compare the emissions per passenger of Swift's Falcon 7X with the Boeing 737, a typical passenger jet that flies the New York to Charlotte route.

For simplicity's sake, we will maximize the capacity of Swift's aircraft and compare it to a two-class Boeing 737 (which has 162 seats, including limited first class seating and then a large economy class).

Even when the flights are at full capacity, the nominal emissions per passenger on the private jet is 8.6 times higher than those who fly commercial. But if you do include the empty leg, the real emissions per passenger (REPP) is a whopping 17.9 times higher.

Departure	Arrival	Flight Hours	Burn Rate (Gal/Hr)	Emissions (LBS)	Emissions (mT)	Passengers	EPP	*Multiplier*
Chicago, IL	New York, NY	2.25	318.00	15097.05	6.85	0	UNDEFINED	

Figure 2: Fully maximized passenger trip vs. maximized commercial flight

Figure 1, however, presents an even more disastrous data point. If you fly alone on that private flight, your nominal emissions per passenger will be nearly 69 times more than if you flew commercial from New York to Charlotte (that number extends to nearly 143 times the emissions per passenger if you include the empty-leg flight).

Problem #3: Private jets don't fly very far

While we calculate burn rates in gallons per hour, that is not explicitly how flight emissions work. Colin Murphy – the deputy director of the Policy Institute for Energy, Environment, and the Economy at the University of California, Davis – told the Washington Post's Allyson Chiu that the takeoff portion of a flight is "the least efficient parts of the plane's duty cycle."

That means short trips are less efficient, making them worse for the environment. Despite that, short trips are not necessarily uncommon. For example, Kylie Jenner's took a flight in July that lasted only 17 minutes, according to a tweet from Jack Sweeney, who tracks private flights from celebrities. Drake got in publicity trouble for a similar issue.

The Solution

The question: How do we fix the private plan problem? **The answer: we should tax the use of private planes.**

We use taxes for a few different reasons. The most obvious (and likely, the primary) reason is to raise revenue for our government to operate. But there are other reasons: taxation can encourage or discourage behavior. In Indiana, the government will give you a tax credit for 20% of any contribution to a college savings account. It's no mystery why the state does this: they want to encourage Hoosiers with children to save for college. The federal government and various state governments offer tax credits to those who purchase electric vehicles. Why? Because those entities want you to buy them. By contrast, every single state and Washington DC tax cigarettes. Why? Because those entities *don't* want you to buy them.

Taxation is a direct reflection of our values. If we want to support pro-climate values (as we should), we can utilize a tax structure to fix the problem.

Private Plane-Specific Carbon Taxation

Every flight hour, Taylor Swift's plane emits more than approximately three metric tons of carbon into the atmosphere. So what's the plan? *Let's tax the three metric tons of carbon.*

> **Sidenote:** I'm on record in support of a universal carbon tax. In a perfect world, it would be implemented globally. But if that can't happen, I am in support of a nationwide carbon tax with border adjustments. There is growing support for this idea among conservatives, and it is a favorite proposal of many moderate Democrats. In fact, Senator Whitehouse discussed the idea earlier this year. There is great think tank work on this proposal as well from across the political spectrum.

There are a variety of ways to actually take carbon out of the atmosphere. The most common way is by planting new trees, which remove carbon from the atmosphere naturally. Another option is the more expensive carbon capture, which is a system that, through technology, takes carbon and buries it deep underground – out of the atmosphere. These strategies are called "offsets."

Both of these offsets, unsurprisingly, cost money. Where can we get the money to pay for the offset? From a high-priced carbon tax on private plane usage.

If you want to fly in your private plane, that's totally fine. However, it should be an expensive practice. An initial proposal would be to price each metric ton of carbon at triple the cost of a

metric ton's offset cost. For example, if the offset cost for each metric ton were $100, the private plane carbon tax (PPCT) would be priced at $300 per metric ton. (Those numbers are just examples – offset costs vary).

> **Sidenote:** Each airplane emits a different amount of carbon per flight hour; therefore, under this system, the federal government would need to accurately create a price-per-hour for each plane based on the plane's burn rate.
>
> The federal government would also be wise to tie the PPCT to inflation so it doesn't suffer the same irrelevant legacy as the minimum wage thirteen years after its passage (the minimum wage was last raised in 2009, and it doesn't adjust with inflation, rendering the current wage as irrelevant).

Implementing this market-based system would have three major effects:

1. **Flying a private jet would immediately become more expensive**. This might mean fliers would start to look for other options to compete with the higher price of flying private. They would likely be more likely to fly commercial, or maybe they might look for other travel options all together.

   For example, Kylie Jenner might think about driving (or, it's probably more accurate to say, "being chauffeured") to her destination instead of taking the 17-minute flight to Glendale. (No matter if she drives or flies, her half-sister Kourtney will surely remind her that "This is not the land. This is Glendale.").
2. **The market for flying jets will probably see less demand**. If people know that it's more expensive to fly via private planes because of the high taxes, they might be less inclined to purchase a jet all together. This means fewer private jet trips in the future, which is better for the environment.
3. **It would give the country the flexibility needed to make big economic decisions.** A good portion of the taxes received from private flights should be immediately directed toward paying the offset of the flight. However, any additional revenue above the offset can go to any number of great projects!

   Here are just a few transportation-related ideas: construct new passenger rail systems, repair and revamp old public transportation infrastructure, modernize public transportation infrastructure, or organize new bike share programs in major cities. But there are non-transportation projects that we could fund too! We could pay down our national debt, add programs to help low-income residents, or build new public housing. There are also major climate-related projects that could use additional funding: capturing even more carbon from the atmosphere or putting more money into fighting against climate change-related disasters (wildfires, droughts, heat waves, etc.) would be a great place to start.

   The bottom line: the PPCT would give our government a lot of flexibility to raise revenue for our national goals *while* make inroads into fixing the climate crisis. That is a win-win scenario.

Traditional Economic Theory

By the way, part of the PPCT proposal is supported by traditional economic theory. What private jets create is an externality, which are "indirect effects [that] have an impact on the consumption and production opportunities of others," according to the International Monetary Fund. Carbon emissions have external effects on all of us: the Environmental Protection Agency says it could "increase the number of heat-related illnesses and deaths" and present "challenges to human well-being and the economy."

When an externality comes into effect, one of the most common solutions is to create property rights. In that system, the producer of the externality must internalize the cost of the externality themselves or pay the cost of the externality to the owner of the property. For example, if a factory creates a chemical runoff into a nearby lake that they also own, the factory internalizes the cost of the pollution.But if they run off chemicals into someone else's lake, they would pay to clean up the other person's lake.

But nobody *really* owns the air that we all breathe, which is why our current system is not efficient. Private planes do not have to pay to pollute the air. Implementing a carbon tax would enforce the externality onto a polluter to find a social cost equilibrium.

Conclusion

Yearning for a Private Plane Prohibition

After the revelation that Taylor Swift's plane flies frequently, some suggested governments should ban private planes outright. I can't bring myself to agree with that policy. It is my belief the use of government bans are most effective when direct human health or safety is at risk.

But in this case, I see this as an economics problem and not a direct health issue: a market-based policy approach would be a step toward repairing the damage the market forces upon our environment. Additionally, a government ban does not allow the government or the market any flexibility; it is the wrong pathway to fixing a market failure in this case.

We've seen successful market-based policies before in and out of the environmental space: for example, New York City operates a licensing system for hot dog stands and a medallion

system for taxis, and the Environmental Protection Agency's market-based systems are, on the whole, a productive strategy.

Are Private Planes Really Even an Issue?

This question probably sounds ridiculous to anyone who cares about environmental policy, but it's actually a really good question worthy of our consideration: are Taylor Swift's flying habits really that big of a deal? How much of an effect on the climate can one person have?

It would be really nice to answer this with a definitive "yes" or "no." The answer is actually a little bit murky. In one way, yes, the use of a private plane does have a significant effect on the environment. Specifically on a per-person basis, private fliers emit far more than the average person each year. Frankly, even commercial flying does have a substantive effect on the climate, which is one reason why we should consider how to make other changes: investing in public transportation or eliminating parking minimums in zoning laws, for example.

There is, however, a very fair argument to be made that the vast majority of emissions come from a concentrated source: big business. More than 70% of the world's emissions generated since 1988 have come from just 100 companies.

Yet, sometimes we decide to focus on personal climate-related decisions rather than wide-sweeping policy. The International Energy Agency says the world economy's annual investment in clean energy "will need to more than triple by 2030 to around $4 trillion" in order to reach net zero emissions by the middle of the 21st century. They write that getting to that lofty net-zero emissions goal will "require nothing short of the complete transformation of the global energy system."

The IEA focuses most of their attention toward business and industry, though they do say some behavioral changes will be necessary. Their net-zero pathway, they say, is not possible "without sustained support and participation from citizens."

The Taylor Swift Example

We spend far too much time attacking people. I watched this past week as Twitter went crazy about this issue. Climate change is a hot topic, and it deserves our attention. Despite that, attacking people gets us nowhere.

I speak often of "rhetoric-oriented activists." It's a loose term to describe the people who talk on social media and do nothing else; it's the people who complain to their friends or attend a protest without asking their legislator for a meeting or speaking during public testimony. Anybody can criticize and attack people, but the people who see their views win the day are those who spend the time delving into policy.

We should spend our advocacy efforts learning about new, forward-thinking policies to actually make a difference. I believe the Private Plane Carbon Tax would be such a forward-thinking step. It's time to refocus our energy from verbal aggression to an astute policy approach.