

Peterson Institute for International Economics

US-China cooperation and fentanyl overdose deaths

May 28, 2025, 11:00 AM to 11:45 AM EDT

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[00:00:18.26] - Cullen S. Hendrix

Greetings and welcome back to the Peterson Institute for International Economics. I'm Collin Hendricks, Senior Fellow, and in a moment I'll be introducing our panelists. Marcus Noland, Julieta Contreras, and Lucas Rengifo Keller in greater detail. Before we dive into this rich and relevant new working paper, I want to acknowledge that the opioid crisis and fentanyl in particular has touched many of us in ways both large and small. It might be something as fleeting as seeing someone on the street with the fentanyl fold, that telltale bending of the body in on itself, or it might be something as profound as the loss of a child, a sibling, or a cherished friend. According to estimates from the Center for Disease Control, more Americans have died from fentanyl and opioid overdoses since 2018 than died in combat during World War II. And each of those deaths represents a deeply human tragedy. I have seen firsthand the quiet hell of a human body and spirit attempting to break free of fentanyl's grasp. At PIIE, we strive to be impactful and timely. But above all, and I quote from our mission statement, to strengthen prosperity and human welfare in the global economy.

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And there are few things more corrosive to prosperity or human welfare than addiction, and few, if any, substances more destructive than fentanyl. Today, our panelists will discuss how cooperation between the United States and China, the world's two largest economies and strategic rivals, helped slow the tide of fentanyl entering the United States, ultimately saving thousands of lives. This research underscores the potential for pragmatic diplomacy to produce tangible benefits, even in tense geopolitical climates. Now, please let me introduce our esteemed panelists. Markus Noland is Executive Vice President and Director of Studies here at the Institute. He's particularly known for tackling hard targets, from the North Korean economy to the illicit narcotics trade, and even human rights violations in Western supply chains. He has held roles with the Council of Economic Advisers at Tokyo University and at the East-West Center, among many others. Julieta Contreras is PIIE's lead statistician and head of our quality control department, where she ensures our research is transparent, replicable, and credible.

This fall, she'll begin her PhD studies at the World Trade Institute at the University of Bern in Switzerland. She's been an invaluable member of our team and I really can't wait to see what the future holds for her.

[00:02:50.01]

And finally, Lucas Rengifo Keller is a former PIIE research analyst, and he is now an economics PhD student at the University of Maryland. And he is very much living proof that the PIIE to PhD pipeline is still humming. They will present the findings from their new working paper. Afterward, I will pose a few questions before opening it up to audience Q&A. Which you can submit via Zoom using the Q&A function. As you submit your questions, please remember to submit your name and your affiliation so that you can be properly recognized. And with that, Mark, the floor is yours.

[00:03:30.28] - Marcus Noland

Well, thanks for that introduction and thanks for watching. The plan is that I will go through the set piece presentation and then Julieta and Lucas will do the hard work of answering questions. So let's share the screen and, uh, get started. There you go. So let's go to the first substantive slide. So drug overdoses are the leading cause of death for Americans 15 to 45, exceeding heart disease, cancer, accidents, suicide, and so on. Most of those deaths are associated with the synthetic opioid fentanyl. The Trump administration, in response to the fentanyl problem here in the United States, has placed tariffs on Mexico, Canada, and China in response, making fentanyl both a public health crisis as well as a trade policy issue. In this paper, we use data on street prices of drugs to model the markets for alprazolam, better known as Xanax, fentanyl, and oxycodone. And then we use those models to examine Sino-US diplomacy over fentanyl and the impact on overdose deaths. We find that the May 2019 agreement by— with China to ban Chinese fentanyl exports to the US reduced overdoses by roughly 25%. Over a limited period of time, and we'll get into more details on that in a moment.

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So let's go to the next slide. So how did we get here? The origin of this research, the origin story of this research is a little odd. During the pandemic lockdown, I was sitting at home reading the Financial Times online and saw an article about how the wholesale price of cocaine in Rotterdam was some big number, 40%, 60%, 80%, something like that, higher than normal because of pandemic-related disruptions in shipping. And as Collin mentioned in his introduction, I've done work on the North Korean economy, so I'm very familiar with smuggling. And it's sort of the light bulb went off in my head. There may be some smuggling that's kind of

Miami Vice style with, you know, light airplanes, but most illicit products are smuggled by piggybacking them on the illicit commercial transportation system. So when that was disrupted, disrupted by the pandemic, it also disrupted the supplies of illicit products. The second part of this story was during one of the, the lulls in the pandemic where they let us go out. And one evening I was sitting in a local bar and our friendly neighborhood drug dealer showed up and sat down next to me and offered to sell me some cocaine.

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And I explained to them I was not interested in purchasing cocaine. But, um, after they left, I started thinking, I don't even know how much cocaine costs. And so the next morning, I started poking around the internet and stumbled across StreetRx, a crowd-sourced database of street prices of prescription and illicit drugs. StreetRx has its origins in county-level poison control centers, which were on the front lines in the early days of the opioid Uh, pandemic, and today is operated in conjunction with the Research Abuse Diversion and Addiction Related Surveillance System, RADARS, uh, administered by the Denver, uh, Health and Hospital Authority, a Colorado state institution. Visitors log in, they report prices on, um, transactions, doses, other drug characteristics, um, city of purchase, and so on. And as you can see from the scatter plot at left, these characteristics show clearly in fentanyl prices. Our sample runs from January 1st, 2013 to September 30th, 2023. We have roughly 26,000 transactions for oxycodone, 12,000 for Xanax, and 1,000 for fentanyl. Next. So what we do is estimate— let's move. The next slide. What we do is estimate what is called a reduced form regression, where we have the prices of these drugs on the left-hand side, and on the right-hand side we have 3 sorts of variables.

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First of all, we have what are called hedonic characteristics, whether the, whether the drug took a powder form, whether it's crushable. That's important because that enables snorting or dilution and injection. So drugs with those characteristics, uh, fetch a premium. Does the drug contain an antagonist that will make it longer lasting? Those drugs sell at a discount. And then like anything else in life, bulk purchases get you a discount as well. And as we'll see that these characteristics of the drugs are, um, highly correlated with their prices. Then on the demand side, we have per capita income, Google rehabilitation searches, and the cross-price elasticity of similar drugs. On the supply side, we have two measures of potential diversion from legitimate supply, the Automated Reports and Consolidated Ordering System, ARCOS, and Medicaid reimbursements, interdiction efforts as proxied by the DEA budget, and Sino-US diplomatic relations. Complication is created by the use of fentanyl to produce, um, counterfeit oxycodone and, um, Xanax pills. And before somebody sends a, a, a question in, I realize

that fentanyl is an opioid, uh, ox, uh, Xanax is a benzo. They're not the same, but drug dealers use fentanyl to counterfeit fake Xanax pills.

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That's just an empirical reality. Um, And this means that the effects of fentanyl will be entering both through the demand side, people intentionally taking it, and through the supply side, but through its use of counterfeiting other types of pills. Then we have a bunch of dogs that didn't bark, things that we tried in the statistical analysis that were not robustly correlated with these prices. These include the national unemployment rate, state-level labor force participation, state-level measures of depression, transportation costs, and a COVID onset dummy. And it's a very unusual dataset. It has a time dimension to it, but it is not a conventional panel. So we cannot do the sorts of econometric techniques that one would use in a proper panel dataset. So we estimate these regressions using simple OLS, ignoring the time dimension. We use quarterly fixed effects, and we also run regressions with the time trend to try to get at this time dimension issue. Okay, let's see the next slide. So, this slide shows the determinants of oxycodone prices to give you a flavor of the econometric results. And I realize this is very, very hard to read. And if you're really interested in the econometric guts of the paper, I recommend you just look at the paper, which is on the Peterson website.

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But what you can see, if you can see, is that the hedonic characteristic variables, including bulk purchases, are robustly correlated with price in the expected way across all three estimation approaches. Per capita income is correlated with Alprazolam prices and oxycodone prices, but not fentanyl. Prices for all drugs exhibit negative time trends, and those are most pronounced for fentanyl. And if you go back to that scatterplot we showed at the beginning, you'll see that that negative time trend is basically in significant part driven by the advent of powdered fentanyl on the streets. Diversion or potential diversion from the illicit market is negatively associated with prices for prescribed oxycodone, but not for fentanyl, presumably because the illicit market is so small. And then finally, the effect of the Chinese embargo embargo in May 2019 is significant in the fentanyl regressions, which you'll see momentarily when we advance the slide. There you go. And you see on the, on the right-hand panel, there's a little red box around the Chinese embargo. So, move on. Before 2019, China was the primary source of illicit fentanyl in the United States. Discussions over this issue began in the Obama administration, and the history of the diplomacy shows that the need to produce what we call deliverables at large multilateral gatherings act as action-forcing events.

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So if you have something like the G20 coming up or something like APEC coming up, there's pressure to come up with some sort of agreement or some sort of new measure that can be pointed to at that event. We find that there is no evidence that the 2008— that the announcement by China at the 2018 G20 summit on scheduling synthetic opioids, that is to say, introducing regulation or control regulations, had any effect. However, The May 2019 ban on the export of fentanyl and some precursors associated with it is associated with higher prices for a period of about 3 to 5 months after the embargo went into effect, as shown in the right-hand panel. There is no evidence that the suspension of or reported suspension of cooperation after then-Speaker Nancy Pelosi's August 2022 visit to Taiwan had any effect. So we look at these various different diplomatic events. The embargo has an effect. The earlier announcement of regulation did not. Pelosi's visit to Taiwan did not. Let's go on to the next slide. So now we want to connect prices and overdose deaths. It may seem surprising to many of you, but there is considerable evidence that drug use, even for highly addictive drugs, is responsive to price.

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There's some evidence that addicts themselves alter the amount they consume based on price. There is considerable evidence that it affects consumption at the extensive margin of potential, uh, users. If the drug has a very high price, you never get started in the first place. So we regress fentanyl-related overdoses against contemporaneous and lagged prices for fentanyl and oxycodone over a 12-month horizon. We, we include the oxycodone because we want to look at so-called cross-price effects. If there's substitution among different forms of opioids. And what we find is a 1% rise in the street price of fentanyl is associated with around a 4%age point decrease in the growth rate of overdoses one month later. And again, these are not conventional demand elasticities because it mixes both the direct effects of price on demand for fentanyl, but it also includes the impact of the price through the supply channel of fentanyl's use to create counterfeit products. Okay, next slide. And we— excuse me— and we find that during the— let's go back— during the 3 to 5 month period after the May 2019 Chinese agreement to ban fentanyl exports to the United States, we get an estimate that it would— that it reduced deaths from overdose during this period by about 25% or about 1,000 people.

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So basically what happens is the Chinese ban exports to the United States. We see an impact on prices. We see a lagged impact on overdoses. We estimate that this effect lasted for about 3 to 5 months. After that, fentanyl production and trade was rerouted primarily through Mexico. And that effect of the embargo disappears. But for that period in late 2019, we estimate that the embargo raised prices and through that price effect reduced overdoses. Okay, next slide. So The overdoses are a public health and, as I mentioned in passing, a trade policy problem. Our

work has established a plausible set of correlates between illicit drug prices and through those prices overdose deaths. We identify one period of cooperation, May 2019, that was affected. Looking forward, we would like to update our sample to take into account more recent cooperation, and if possible, cooperation that may well emerge over the course of the year, driven by the imposition of tariffs on China connected to this, and as well, possible cooperation with Canada and particularly with Mexico that may emerge driven by the imposition of tariffs. We can also extend this analysis to other drugs. And the one that I think is particularly interesting is meth, which you see in the left-hand panel, where you see that there is a negative trend in prices.

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And meth is now the sort of rising drug associated with overdose deaths in the United States. There are still many more overdoses from fentanyl, but kind of the growth is in meth. So thank you very much for your attention, and we look forward to interacting with you for the remainder of our period. Thanks.

[00:19:10.10] - Cullen S. Hendrix

Well, allow me to be the first to thank you, Mark, and the whole team on a fantastic research paper, which of course I had the opportunity to digest as both a final product and during its writing. So it's always nice to be on the inside and see how these kind of ideas and findings evolve. So I have a few questions that I'm going to pose to the panelists, but our panelists— or Mark did an excellent job of conserving time. So we have ample time for you to get your questions in for the Q&A so that I can then convey those to our panelists. So while you are coming up with your brilliant questions, I'm going to go ahead and get us started with a couple. So as I understand the analysis here, it points to short-term gains from China's crackdown on fentanyl and precursor exports, followed by, as Mark, you just, you just said, the rerouting or the reorientation of supply chains through third countries like Mexico. We can think of this as being kind of an example of the Hydra effect that Peter Andreas has described, where efforts to suppress illicit activities often lead to adaptive behaviors and proliferation of channels for illicit shipping, essentially putting us in a situation where cutting off the, you know, the head of the hydra only facilitates more of them growing back.

[00:20:39.24]

So given this, and I realize it's a hard question, are supply-side restrictions ever likely to be more than a high-stakes game of whack-a-mole, or are there conditions under which they can yield a more lasting impact?

[00:20:55.24] - Lucas Rengifo-Keller

Yeah, so I can take this one, Colin. Um, it's a difficult question. I think, um, things to keep in mind are that, um, obviously when authorities successfully lower the supply of one drug, uh, or one precursor, other variants may emerge to meet that demand. Um, And so policies that successfully raise the price of one drug may drive users to other substitutes. And this can work in both the positive and the negative directions. For instance, there's a paper that found that state-level efforts to restrict supply for oxycodone in some U.S. states actually drove people to use more fentanyl, which is, of course, more lethal. So it was sort of an unintended impact of, uh, of a successful policy. So officials have to be careful when restricting the supply of one drug because the market exhibits these substitution effects. You don't want to make lethal substitutes relatively more attractive. So having said that, um, the emergence of new variants is inevitable. If policy makes it hard to, uh, manufacture one drug, new forms of supply will emerge. That is almost inevitable. But the good news is that drug epidemics tend to not last forever, just, uh, from, from experience.

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Um, and so while they play themselves out, officials can do a number of things to reduce those deaths, like you said. Um, and on the supply side, if officials are able to respond to new variants in sort of a timely manner, uh, then they might succeed in deterring potential users. Through, let's say, a higher price, like our analysis shows. Um, and, um, and I hopefully— I mean, if they're nimble and they are, uh, they are, uh, shrewd, they can push current users towards less harmful substitutes. So sort of the essence is epidemics don't last forever. Officials just have to be nimble and act quickly when new variants emerge to, uh, make sure that they are harm reducing and pushing users towards better, better substances. And of course, I mean, there are demand side things they can do as well, you know, mental health treatment and support for users. Of course, we don't touch that in our paper, but yeah, being nimble and attacking the new variants is important.

[00:23:23.29] - Cullen S. Hendrix

Now, I think that what you, what you said, Lucas, makes a lot of sense. It's interesting. I was driving around in Denver, Colorado, as it were, which is the home to the project that houses the data that were underpinning this analysis. And I saw, I've been seeing billboards lately that just say simply, "Harm reduction works." And so I think that that's consistent with kind of the messaging that you were providing there, that through these kind of interventions in the market, and in this case, right, some diplomatic cooperation, you can suppress these kind of things.

They are going to divert in different directions, but, you know, potentially or hopefully they might divert into an area where the risk of loss of life is significantly lower. Thank you.

[00:24:10.02] - Marcus Noland

Could I add something? Please do. We're going to have to do diplomacy, and that's increasingly going to have to include Mexico. It's no longer just the US-China bilateral issue. We can do diplomacy. I would not, as some people have been discussing around Washington, I would not be supportive of us intervening militarily in Mexico. I think we have to do this through diplomacy. We can increase interdiction efforts on our side of the border. And there are some, you know, there's some positive news in that dimension. But the other thing I'd like to add is as China becomes more restrictive in export of precursor chemicals, demand for those chemicals is now shifting to India. So eventually, if the crisis doesn't burn itself out fast enough, India will get pulled into this in a significant way. And so again, the diplomacy is going to have to be multilateral and it could get more complicated later on in the year. Okay.

[00:25:24.27] - Cullen S. Hendrix

Well, thank you for that addition, Mark. I mean, actually, That, that tees up very nicely the second question I was going to pose to the panel, which is that, as the presentation makes clear, this is an ongoing issue. It has roots in the Obama administration and extended through the first Trump and Biden administrations as well. In the paper, you provide this really useful timeline that, that, that outlines sort of the U.S.-China bilateral diplomatic discussions and then interventions. And, you know, that the, the last notch, as I recall, in that timeline was the launch of the US-PRC, so People's Republic of China, counter-narcotics working group. And that suggests that as of last summer, the direction of travel was positive. Do you think that that direction of travel is going to continue positively during Trump 2.0, or what types of bilateral discussions or increasingly multilateral discussions may take place?

[00:26:24.16] - Marcus Noland

Well, in February, the Trump administration imposed a 10% tariff on, uh, Canada, Mexico, and China associated with the fentanyl crisis. And when the Chinese retaliated, the Trump administration upped it to 20%. Then with the so-called Liberation Day tariffs, uh, the Trump administration imposed additional tariffs on China. China once again retaliated, and the two countries got into a retaliatory spiral where we ended up with triple-digit tariffs going in both ways. Now, within the last few weeks, we've pulled that back. And so right now we have a base-level tariff of 30% on China, 20% of which is fentanyl. So if I were the Chinese government and I'm looking for a way to get out from under some of this tariff action, a concession on the

fentanyl issue would be— strikes me as a pretty easy one. The The issue is enforcement. The chemical industry in China that makes the precursors is very decentralized. Some of them may have links to local or provincial governments. And so it's not going to be— it's not a simple thing. But one would think that given the stakes, the government of China would be motivated to reach some sort of accommodation with the United States on this issue.

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And indeed, the rumors around town is the Chinese are ready to negotiate. But the Trump administration, and I'll be in fairness, all American administrations appoint so many people that it's really May or June after the president is inaugurated before the government's really ready to do business. So my expectation is over the next couple of months, we'll see intensified negotiations between the United States and China that will reduce if not the entire fentanyl tariff on China, but reduce part of it at least. Then we'll end up in an ironic situation in which President Trump campaigned on putting a 60% tariff on China. Well, if he removes the fentanyl, uh, component completely, you're down to 10%. And, uh, I don't think that's politically sustainable. So I would not be at all surprised if the United States then introduced special protection on the pharmaceutical industry. That will cause another round of upheaval with China and in this case, India as well.

[00:28:55.04] - Cullen S. Hendrix

Thank you, Mark. Actually, that provoked a follow-up question because, you know, if we think about this as a situation in which concessions on the Chinese side are, you know, the statements of cooperation and, you know, commitments to crack down on the export of certain precursors or fentanyl itself, are one thing, but it strikes me that because of the very illicit nature of what we're talking about, there may be issues with attribution. So I guess this— and this is a kind of, I guess, a more meta question because it applies to the relations with Mexico, Canada, which is also caught up in this as well, and potentially India. And that is, based on what law enforcement and the U.S. government can observe here at home, how do we know that the Chinese are complying? Do we know it through the price effects, or are there other ways in which we can observe compliance with these kinds of agreements and initiatives? I'm just curious about that. And as an expert in, in studying these kind of hard targets and difficult to observe phenomena, I'm just wondering what, what you think about that.

[00:30:06.15] - Marcus Noland

Well, to monitor Chinese compliance, we really need cooperation from Mexico because it's going to be the Mexico Navy operating the ports that's going to be able to tell us that

information, which is another reason why I don't think we should be sending in the Marines. I think that we need Mexican cooperation. The way to get that cooperation is through diplomatic engagement, not some sort of military action against Mexico. But ultimately, whoever is administering the Mexican ports is going to be able to be the ones that tell us if these precursor chemicals are coming in and where they're coming from, whether they're no longer being sourced in China, but rather now they're being sourced in India. Okay.

[00:30:52.23] - Cullen S. Hendrix

Yes, this is sounding like a very complex— this is maybe not even 3-dimensional, maybe 5-dimensional chess that we're trying to play here. But it does seem as if keeping some of those closer trading partners and allies onside with— in a more cooperative kind of framework is going to be key. This does not seem like an issue that can be solved via what we used to call gunboat diplomacy. And I think that that gives us an opportunity to maybe zoom back out to a broad aperture for a moment with another question, which is that I think that this case is useful because it demonstrates that even amid geopolitical tension, US-China cooperation can produce significant benefits. Does this model offer any kind of lessons for collaboration on other transnational challenges? Could be climate, could be pandemics, could be artificial intelligence. Or is the fentanyl issue kind of uniquely, or was it uniquely conducive to cooperation for that defined time period?

[00:32:00.04] - Julieta Contreras

So, Colleen, thank you for that question. I'm going to take over. I think, you know, what our research shows is a strong correlation of a desirable outcome, that is the drop in deaths from overdose on fentanyl, to concrete cooperation efforts and actions, like a concrete action, which was in this case China adding all fentanyl-related substances and additional precursors to their control substances list. So basically the ban. So we analyzed other events, as Mark presented previously, related to counter-narcotic cooperation, like between the US and China, for example, the 2018 announcement of cooperation at the G20 summit. This particular event did not show significant effects on fentanyl prices and therefore would not likely influence fentanyl overdose-related deaths. Does this research make a case for concrete policy actions? That is not only an announcement or just talks, concrete, like a concrete policy measure. What this research can offer, though, for all researchers and policy analysts is a helpful approach that others can take in trying to analyze other cooperation and policy measures in addressing other transnational issues. This is ultimately the question you ask is ultimately an empirical question that will need to be tested for other cooperation efforts.

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The shape that these efforts will take will be different from the WASP percentages. But let me add something else. This is how our research can be used. It's offering tools. How can one analyze a concrete policy action to that leads to a positive outcome or negative, you know, you can analyze it. But the difference in the issues that you mentioned versus the issue that we are trying to analyze in here is the issues you mentioned are less confined geographically speaking, you know, like pandemics, you know, it's a global issue or can be like more regional issue. Climate, global issue. AI, global issue. So this is a bit different. So the policy actions that need to be analyzed, they need to be different, you know. So basically what researchers need to do to analyze these issues is focus on specific and concrete actions being taken. So hopefully that kind of answers the question.

[00:34:46.06] - Cullen S. Hendrix

No, I mean, I appreciate that. And I think that it seems as if you were circling in on the idea that there is something that may be unique here, at least with respect to differentiating it from, say, climate change and artificial intelligence, because the number of players is relatively small. We've only mentioned, I believe, 4 countries by name. I may have inserted a reference to Canada, but Canada is not a significant participant, or at least not anywhere near the scale of participant in these kind of supply chains or as a transshipment mode as the other countries that we've been talking about. I'd like to talk a little bit because, you know, this is a working paper. This is not a policy brief. So this is a— if you'll forgive the term, somewhat of an academic kind of exercise. And I think that given the subject matter, which is a bit left of the dial, I think for what I think many people people would think is the, the bread and butter of the economics profession. I'm curious, what, what did you learn in the process? And I'll open this up to all of our panelists.

[00:35:52.26]

What did you learn in the process of researching this and writing this that you thought was kind of an interesting nugget or insight that you generated just by diving so deep on this issue that has been the topic of so much discussion, but it exists largely, uh, I'd say, in the shadows of our society? What did you uncover in that process that really stuck with you and made you think, oh wow, this is, this is something that, that the, the, the world needs to know about and will find interesting?

[00:36:23.04] - Marcus Noland

Well, for me, I was reminded that drug users are pretty good chemists. Um, the, the, the, the different, the differentiation of the forms of drugs by their amenability to abuse really stands out in the data. You know, if it's, if it's a powder, if it's crushable, you know, it really does fetch a

premium. And if it's got some sort of antagonist in it, it really doesn't. And that stuff just jumps out at you in the data. The other thing was, as I mentioned, The, the original sort of origin of this was in the pandemic. And we were looking, one of the things we spent a lot of time looking at was transportation costs. And we had two problems. One is that during the period we were doing the research, basically everything was rising at once. And so the It's kind of hard to tease out what the impact is. And the other thing is, as Jeff Myron pointed out in a paper, I don't know, 20 years ago, transportation costs actually are a relatively small component of street prices of drugs. Basically, you have to compensate people for the risk of being involved in this illegal activity.

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And normally these drug chains are many you know, many steps between the, the manufacturer of the drug and the final user. And everybody has to get paid along that supply chain so that the transportation costs are typically under 10%. And so the fact we weren't able to uncover anything, it's not that surprising, even though that's kind of where we started out. The other thing is we've spent a fair amount of time looking at psychological factors, including depression, anxiety, things related to the pandemic itself. And we found some results, but not as many as I thought we might be able to. And so I think that if we go back and take a second cut at this, extend the sample closer to the present, and so we get some of those indicators going down and there's a little more sample variation, we may be able to tease out some of those things that were not apparent in this first cut.

[00:39:01.20] - Cullen S. Hendrix

Okay, thank you. Lucas, Julieta, did you have any sort of aha moments or any point at which you thought, wow, I'm not just teaching the world something here, I learned something very interesting for myself that I'll take with me?

[00:39:18.29] - Lucas Rengifo-Keller

Yeah, a few things sort of playing off what Mark said. The first is that this immense disruption to global supply chains seemingly had, I mean, that we can tell, no impact on fentanyl prices or most other importables. And that's surprising. But like Mark said, I mean, fentanyl is so light. It is so easy to transport. That, frankly, I— it's just very hard to prevent it from coming in. And if when it's already in, it can be stockpiled. So, I mean, that was a very surprising result. And I think it, it underlines how difficult this problem is, that the supply chain is very hard to nail down and very hard to disrupt.

[00:40:17.23] - Cullen S. Hendrix

I just want an observation on that. I mean, were you able to, in your calculations, infer what the fentanyl stockpiles were inside the United States at the point when the export ban was implemented?

[00:40:30.26] - Lucas Rengifo-Keller

We have a variable that tracks illicit supply. Of course, for fentanyl, that's probably quite small. It's used in some surgical settings, but it's not It's by no means the more common analgesic. That being said, we can't directly observe it. We can infer that a stockpile is there given that the price, if anything, fell amid all of these supply disruptions.

[00:41:01.19] - Marcus Noland

There's anecdotal accounts of Mexican dealers stockpiling these precursors, but it's very hard to tease that out.

[00:41:14.02] - Cullen S. Hendrix

I understand. Julieta, you haven't had a chance to chime in on this. I'm curious, what did you find or what, what has stuck with you?

[00:41:21.19] - Julieta Contreras

Very similar to my co-authors. I was very surprised by the fact that hedonic variables, that is like the characteristics of the drugs themselves, have a significant, statistically significant impact on the price. And while these other variables that might— one might expect to be significant were not, like as Mark mentioned, I was looking into the data for depression, anxiety. There is a vast amount of data out there, and yet there were not very consistent results, you know, in our regressions. And that's very surprising to me. And I think this needs further analysis. Like maybe, like as Mark said, like increasing the sample, like increasing the sample size, the time period that we are using. The other very interesting thing that I learned working on this project, you know, like It might seem obvious, but, you know, I learned a lot about, like, these hedonic characteristics. So for example, the fact that a drug can be crushable, in the case of OxyContin, for example, they sell with a premium, you know, because you can just crush them. The user can crush them and it will have a larger effect, you know, a more, yeah, increased the high, let's say, uh, because it can be either, uh, consumed, you know, by inhaling it or injecting it.

[00:43:05.26]

Um, the other variable that really surprised me is that— that was very significant, as you can see in the paper— is this characteristic of oxycodone, uh, the capability of the diminishing effect. So What this variable is measuring is basically whether the oxycodone, the pill or whatever, how is administered, it is mixed with an opioid antagonist. The commercial name out there is Narcan. The substance is naloxone. That is, the substance binds with the opioid and it reduces its effects. That variable actually has a negative impact on the price. That is like they're selling at a less price, you know, because it's like it cannot induce a higher high, sort of, sort of speak. So for me, that was very, you know, I learned something new and I was very surprised.

[00:44:03.08] - Cullen S. Hendrix

And if I'm correct, Narcan is also an immediate rapid response intervention that is available to prevent overdose deaths if administered quickly. But I suspect it's extremely effective. Just anecdotally, the things that I've heard from people who've been in situations where it's been in use, that it's had very positive effects. We're actually coming relatively close to the end of our time together today, but I just wanted to ask if any of you had any final, just very brief concluding thoughts that you wanted to get on the table, if there's something you were itching to say but hadn't had the opportunity to yet.

[00:44:47.13]

No, not me.

[00:44:49.11] - Lucas Rengifo-Keller

I have sort of a final thought, Cullen. So during a lot of this analysis, as I looked especially at the sort of monthly overdose deaths at the national level, you sort of see this sort of snowball effect in action. And it seems that snowball effect is sort of finally diminishing. I mean, the overdose deaths fell last year, which is a tremendously positive thing. And I think that officials need to take advantage of that momentum and act both diplomatically and domestically to, to sustain that decrease in deaths.

[00:45:40.17] - Cullen S. Hendrix

Okay.

[00:45:40.29] - Marcus Noland

And unfortunately, the Trump administration looks like it's doing the opposite, cutting supports to distribute Narcan and so on. So we need to stay on this. And but our domestic policy may not be moving in that direction.

[00:45:58.26] - Cullen S. Hendrix

Okay. So unfortunately, it sounds as if this, this, this fentanyl wave was potentially on the ropes, but it's been given a little bit of a— it was saved by the bell or a change in policy that may allow it to linger a little bit longer than any of us would want it to be around. Well, on that note, I would like to thank you all for joining us today. And please join me as we are exiting in thanking our panelists for this excellent research. You can find the working paper at our website, as well as, I believe, a blog-length treatment of it for those of you who maybe don't want to wade into all of the econometrics but want to get the gist of the analysis. Thank you very much. We look forward to seeing you at future Peterson events. Have a wonderful day.