Replication Appendix for

"To What Extent Do Supply Chain Disruptions Drive Inflation?"

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Model Specifications

This appendix provides a more technical overview of the models and restrictions employed. Our models take the same general form of the specification in Antolín-Díaz and Rubio-Ramírez (2018). Our reduced-form model includes a constant and twelve lags. We also use a noninformative/flat prior. For identification of the article's structural VAR models, we use sign and narrative sign restrictions following Arias, Rubio-Ramírez, and Waggoner (2018) and Antolín-Díaz and Rubio-Ramírez (2018). For the first presented structural model, which considers just a supply shock and does not separate cost-push and supply chain shocks, we retain 500,000 draws that satisfy the sign restrictions and have around 10,000 draws that satisfy the narrative restrictions. For the second structural model, which considers both cost-push and supply chain shocks, we retain 300,000 draws that satisfy the sign restrictions and have around 8,000 draws that satisfy the narrative restrictions.

Table 1 shows the sign restrictions employed in the first model. These restrictions resemble those used in De Santis (2021), with deviations to make the restrictions less stringent. A positive (negative) sign indicates that a given shock causes a given variable to increase (decrease) on impact, whereas a question mark indicates that no restriction is placed on the direction of impact.

	Demand Shocks	Monetary Policy Shocks	Financial Shocks	Supply Shocks
Employment	+	-	-	-
Inflation	+	-	?	+
Interest Rates	+	+	?	?
Credit Spread	?	?	+	?
Supplier Delivery Times	?	?	?	?

Table 1: Sign Restrictions of the First Presented Model

Additionally, based on the following historical events, we impose the following narrative assumptions (using the language of Antolín-Díaz and Rubio-Ramírez (2018)):

First COVID-19 Shutdown Positive supply shocks occurred March 2020 and April 2020.

	Additionally, negative demand shocks occurred during this period.
2021 Supply Chain Disruptions	A positive supply shock occurred during March 2021.
US-China Trade War	A positive supply shock occurred during June 2018.
Hurricane Katrina	A positive supply shock occurred during September 2005.
Great Financial Crisis	Positive financial shocks occurred during observations corresponding with both September 2008 and October 2008. Additionally, these shocks were the most important contributor to the observed unexplained movement in the credit spread for the September 2008 and October 2008 observations.
Volcker Reform	A positive monetary policy shock occurred during the observation corresponding with October 1979. Additionally, this shock was the most important contributor to the observed unexplained movement in the interest rate for the October 1979 observation.

Our first set of narrative restrictions is based on the first COVID-19 shutdowns, in March and April 2020 that caused firms to either completely shut or slow down production. The supply chain shock in March 2021 is based on the work of De Santis (2021) and analysis of both the New York Fed's index of global supply conditions and the ISM's index of supplier delivery times, along with contemporaneous news articles. The restriction based around United States–China disagreements was chosen based on tariffs that were implemented in June 2018. Another restriction was put in place for Hurricane Katrina under the assumption that the devastation from the hurricane significantly impacted shipping, manufacturing, and production in the affected areas. While many periods could qualify for identification of a financial shock during the Great Financial Crisis, we select September and October 2008 based on the large policy moves made by the United States during these months. Finally, to help identify a monetary policy shock, we use the month in which former Federal Reserve Chair Paul Volcker announced new policy measures for the Federal Open Market Committee.

Table 2 shows the sign restrictions employed in the second model. Note that we distinguish a cost-push shock and a supply chain shock based on the effects they have on supplier delivery times. Removing the restriction that cost-push shocks have negative effects on supplier delivery times does

not meaningfully change the results, and, as argued in the main body of the text, is a reasonable assumption.

	Demand Shocks	Cost-Push Shocks	Monetary Policy Shocks	Financial Shocks	Supply Chain Shocks
Payroll	+	-	-	-	-
Core PCE	+	+	-	?	+
Interest Rates	+	?	+	?	?
Credit Spread	?	?	?	+	?
Supplier Delivery Times	?	-	?	?	+

Table 2: Sign Restrictions of Second Model.

For the second model, we impose restrictions on the same historical events as in the first model. However, we refine some of the restrictions on supply shocks to emphasize the effects that supply chain shocks had on supplier delivery times. As a result, we replace the restrictions on the following events with these:

First COVID-19 Shutdown Supply chain shocks were the most important contributor to the observed unexplained movement in the ISM index of supplier delivery times for observations corresponding with March 2020 and April 2020. Additionally, negative demand shocks occurred during this period.

Hurricane Katrina Supply chain shocks were the most important contributor to the observed unexplained movement in the ISM index of supplier delivery times during the observation corresponding to September 2005.