# Self-Harming Trade Policy?

We estimate panel local projections using the identi..ed trade-policy shocks to determine the dynamic e¤ects of protectionism in protected and downstream industries. Local projections con-

the rules of WTO. Antidumping proceedings determine whether foreign exporters sell goods in a

## Descriptive Statistics

### *Temporary Trade Barriers in the U.S.*

We construct monthly time series for products subject to new investigations using the World Bank's Temporary Trade Barriers Database (Bown, 2016). Following Bown and Crowley (2013), we record the number of Harmonized System (HS) 6-digit products for which an investigation begins in a given month. We match the date of each investigation to the number of products covered by each investigation.[7] Using the conversion table constructed by Pierce and Schott (2009), we then aggregate the HS 6-digit classi…cation to the NAICS 4-digit industry level. The sample covers the period 1994:1 until 2015:12. The balanced panel features $\boldsymbol{T}$ = 264 observations and $\boldsymbol{N}$ = 70 industries.

Table 1: Top TTB Users, Descriptive Statistics

Figure 1:

Table 2: Top TTBs Users, Vertical Linkages

example, consider the "Iron, Steel, and Ferro-Alloy" industry. In November 2000, the U.S. opened investigations on 27 imported products against 11 trading partners.[10] The imports covered by the investigations represented 3.7% of the steel sector's imports in 1999. This is our measure for November 2000.

Figure 2: Share of imports a¤ected by new TTB investigations in selected NAICS-4 industries (histograms) and employment growth (continuous line).

and expected dynamics of a given variable of interest (employment in our case).[12] Once this is accomplished, it is possible to use the remaining variation to estimate causal e¤ects.

We identify TTB variation plausibly exogenous to employment dynamics using within-industry time-series variation in TTBs. We also consider a speci…cation that exploits the data's panel dimensions, including …xed e¤ects, for robustness. In both cases, we regress the import share subject to new TTBs ( $_{it}$) on speci…c industry-level controls and exploit features of TTB procedures to impose short-run restrictions.

First, we control for lagged employment growth since the trade literature shows that TTBs re-

dismisses such a possibility since TTBs address pre-existing trade injuries.[13] Nevertheless, using

*Time-Series Approach*

We estimate a fractional response model (Papke and Wooldridge, 1996, and Papke and Wooldridge, 2008), since the baseline trade policy measure is bounded between zero and one. Fractional response regressions are a popular tool to model continuous dependent variables since they restrict the conditional mean between [0; 1].

*Panel Approach*

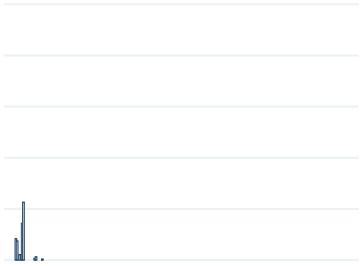

Figure 3:

Table 4: First-Stage Estimation, Shock Properties

| | NAICS-4 Industry Code |
|---|---|

be estimated in a simple univar0G0g0GBT/F6218framew

## The Role of Production Networks

In order to estimate the effects of protectionism through production networks, we run the following set of $h$-steps ahead predictive panel regressions:

$$L_{it+h} = \alpha_{ih} + \beta_h^{IO} \pi_{it}^{IO} + \gamma_{t+h} + \varepsilon_{it+h}; \tag{7}$$

Figure 4: Impulse responses following a protectionism shock.

Figure 5:

## 5 Economic Mechanisms and Quantitative Implications

We …rst explore the mechanisms behind the negative response of downstream employment. We show a loss of competitiveness can rationalize the employment decline. Both intermediate-input and …nal producer prices increase following upstream protectionism, and the increase in prices precedes the employment decline. Using daily data, we also …nd that new TTBs lead to a statistically signi…cant and lagged reduction in downstream-industries stock returns, con…rming the decline in downstream industry pro…tability.

Second, we address the relevance of the results from an aggregate perspective. We …nd that TTB tari¤s result in a statistically signi…cant decline in manufacturing and aggregate employment. These negative e¤ects re‡ect a sizabn3 bn3long-la(st)28(wbn3)-21(eg-319(-2gat)-336(increbn3)-337bn3kegatiycreb

whose output is used as an input in industry $i$):

$$P^I_{it} = \sum_{j \neq i} \omega_{ij} P_{jt};$$

where $P_{jt}$ is the PPI index in industry $j$ at time $t$. As in Section 3, we use fixed weights from I-O tables (total requirements) that reflect the contribution of each sector $j$ to the output of industry $i$.

Let $P_{it+h} \equiv \log P_{it+h} - \log P_{it-1}$ and $P^I_{it+h} \equiv \log P^I_{it+h} - \log P^I_{it-1}$ denote, respectively, the cumulative growth rate of final and intermediate-input prices between time $t-1$ and $t+h$. We estimate the response of intermediate input prices by running the following set of $h$-steps ahead predictive panel regressions:

$$P^I_{it+h} = \alpha^{IO}_{ih} + \sum_{s=1}^{q} \beta^{IO}_{ih} P^I_{it-s} + \gamma^{IO}_{ih} P_{it-1} + \varepsilon^{IO}_{it+h}; \quad (8)$$

where $\varepsilon^{IO}_{it}$

$$P^I_{it+h} = \alpha^I_{ih} + \sum_{27}$$

proximately 0:4 percentage point at the peak, while ...nal-producer prices increase by approximately 0:2 percentage points.

where $R_{id+h}$ denotes the median industry return between day $d$ and $d + h$, $_{ih}$

Time-fixed effects in (7) remove variation in industry employment due to aggregate dynamics that follow TTB shocks, including the potential response of macroeconomic policy. Also, there could be unmeasured employment spillovers across industries. Since TTBs affect only a subset of manufacturing imports, aggregate feedback effects are not likely to have a first-order effect on industry employment. However, sectoral spillovers in downstream industries are more likely to materialize. We turn to this issue next.

Consider an industry $i$ that do7(v)28r5so[(that)animp anId[(indust20)-452(spillo)27(v)28ext.-132.212]TJ0-20

The episode occurred in August 2015, when the share of imports subject to new TTBs increased by 8.9%.[25]

similar tari¤s— would lead to considerable negative employment e¤ects through vertical production linkages.

## 6 Robustness

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For each NAICS 4-digit industry, we construct the price-to-earnings ratio, ***PE***

Figure 7:

Figure 8: Impulse responses following a protectionism shock. *Panel A*: $_{it}$ constructed using average import shares. *Panel B*: TTBs include global safeguards. *Panel C*: Only episodes that end up with tari¤s.

## References

Acemoglu, D., D. Autor, D. Dorn, G. H. Hanson, and B. Price (2016): "Import Competition and the Great US Employment Sag of the 2000s," *Journal of Labor Economics*, 34,

Cavallo, A., G. Gopinath, B. Neiman, and J. Tang (2021): “Tari¤ Pass-Through at the

Staiger, R. W.,

the book value of preferred shares (*pstkq*

Figure A.2: Market-to-book ratio in selected NAICS-4 industries (dashed line) and employment growth (continuos line).

Figure A.3: Market-to-book ratio in selected NAICS-4 industries (dashed line) and employment growth (continuos line).

counterparts ( $L_{it}^{DI}$ and $MB_{it}^{DI}$). We do so since variation in $d_{ict}$ may partly reflect an endogenous response to past or expected industry dynamics. We include twelve lags for the growth rate of employment and three lags for $IMP_{ict}$, $L_{it}^{DI}$, $MB_{it}$, and $MB_{it}^{DI}$. Figure A.6 shows a statistically significant decline in average bilateral U.S. imports following industry-country-specific U.S. TTBs, providing additional support to the main results of the paper.

Figure A.5:

Figure A.6: Impulse responses following a U.S. protectionism shock, average bilateral U.S. imports response.

a¤ecting …rms' returns:

$$R_{id} = {}_i + {}_i R_d^m + \varepsilon_{id};$$

where the median return for industry $i$ and the market portfolio return, $R_{id}$ and $R_d^m$, are expressed as excess returns with respect t9 excess return7(t9)-isk-free-478(rratesse515(r.e.sse515(turn7(t9)one-monfoli-47 andmd

Figure A.7:

Figure A.8: Impulse responses following a U.S. protectionism shock, import unit-values response.

Share of imports subject to TTBs.A51

Figure A.10:

Figure A.11: Impulse responses following a U.S. protectionism shock, median cumulative downstream stock-market abnormal return (days).

Figure A.12: Impulse responses following an aggregate TTB shock.