ONLINE APPENDIX TO
Global Supply Chains in the Pandemic *

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Appendix A Proof and Additional Derivations

A.1 Proof of Proposition 1

The derivation of the influence vector follows closely the steps in **?**. In this appendix, we derive the influence matrix under the assumption that there is only one group for the final good consumption. The more general case with multiple groups is a straightforward extension of the current analysis.

Demand-side linearization The market clearing condition and the balance of payment condition require

$$
\begin{aligned}
P_{nj}Y_{nj} &= \sum_m P_m \mathcal{F}_m \pi^f_{nmj} + \sum_m \sum_i (1-\eta_i) P_{mi} Y_{mi} \pi^x_{nj,mi} \\
P_m \mathcal{F}_m &= \sum_i \eta_{ni} P_{mi} Y_{mi}.
\end{aligned}
$$

The log-linearized version is

$$
\begin{aligned}
\ln P_{nj} + \ln Y_{nj} = &\sum_m \sum_i \frac{\eta_i P_{mi} Y_{mi} \pi^f_{nmj}}{P_{nj} Y_{nj}} (\ln P_{mi} + \ln Y_{mi}) + \sum_m \frac{P_m \mathcal{F}_m \pi^f_{nmj}}{P_{nj} Y_{nj}} \ln \pi^f_{nmj} \\
&+ \sum_m \sum_i \frac{(1-\eta_i) P_{mi} Y_{mi} \pi^x_{nj,mi}}{P_{nj} Y_{nj}} (\ln P_{mi} + \ln Y_{mi} + \ln \pi^x_{nj,mi})
\end{aligned}
\tag{A.1}
$$

where

$$
\ln \pi^x_{nj,mi} = (1-\varepsilon) \sum_{k,l} \pi^x_{kl,mi} (\ln P_{nj} - \ln P_{k\ell}) \tag{A.2}
$$

$$
\ln \pi^f_{nmj} = (1-\gamma) \sum_{k,\ell} \pi^f_{km\ell} (\ln P_{nj} - \ln P_{k\ell}). \tag{A.3}
$$

Define the following share matrices:

1. $\mathbf{\Psi}^f$ is an $NJ \times N$ matrix whose (nj, m)th element is $\frac{\pi^f_{nmj} P_m \mathcal{F}_m}{P_{nj} Y_{nj}}$. That is, this matrix stores the share of total revenue in the country-sector in the row that comes from final spending in the country in the column.

2. $\mathbf{\Psi}^x$ is an $NJ \times NJ$ matrix whose (nj, mi)th element is $\frac{(1-\eta_i)\pi^x_{nj,mi} P_{mi} Y_{mi}}{P_{nj} Y_{nj}}$. That is, this matrix stores the share of total revenue in the country-sector in the row that comes from intermediate spending in the country-sector in the column.

3. $\mathbf{\Upsilon}$ is an $N \times NJ$ matrix whose (n, mi)th element is $\frac{\eta_i P_{mi} Y_{mi}}{P_n \mathcal{F}_n}$. That is, this matrix stores the share of value added in the country-sector in the column in total GDP of the country in the row. Note that these are zero whenever $m \neq n$.

4. $\mathbf{\Pi}^f$ is an $N \times NJ$ matrix whose $(m, k\ell)$th element is $\pi^f_{km\ell}$. That is, this matrix stores the final expenditure share on goods coming from the column in the country in the row.

5. $\mathbf{\Pi}^x$ is an $NJ \times NJ$ matrix whose $(k\ell, mi)$th element is $\pi^x_{mi,k\ell}$. That is, this matrix stores the intermediate expenditure share on goods coming from the column in the country-sector in the row.

6. $\mathbf{\Pi}^{\mathcal{O}}$ is an $NJ \times N\mathcal{O}$ matrix whose $(nj, n\ell)$th element is $\pi^{\mathcal{O}}_{nj\ell}$. That is, this matrix stores the expenditure share on occupation ℓ in country n sector j.

Then, equation (A.1) can be stated in matrix form:

$$\begin{aligned}\ln \mathbf{P}_t + \ln \mathbf{Y}_t = & \Big(\mathbf{\Psi}^f \mathbf{\Upsilon} + \mathbf{\Psi}^x\Big)(\ln \mathbf{P}_t + \ln \mathbf{Y}_t) + (1-\gamma)\Big(\operatorname{diag}\Big(\mathbf{\Psi}^f \mathbf{1}\Big) - \mathbf{\Psi}^f \mathbf{\Pi}^f\Big) \ln \mathbf{P}_t \\ & + (1-\varepsilon)\Big(\operatorname{diag}(\mathbf{\Psi}^x \mathbf{1}) - \mathbf{\Psi}^x \mathbf{\Pi}^x\Big) \ln \mathbf{P}_t.\end{aligned}$$

This allows us to express prices as a function of quantities, $\ln \mathbf{P} = \ln \mathbf{Y}$, where[1]

$$\begin{aligned}\mathcal{P} &= -\Big(\mathbf{I} - \mathcal{M}\Big)^+ \Big(\mathbf{I} - \mathbf{\Psi}^f \mathbf{\Upsilon} - \mathbf{\Psi}^x\Big) \\ \mathcal{M} &= \mathbf{\Psi}^f \mathbf{\Upsilon} + \mathbf{\Psi}^x + (1-\rho)\Big(\operatorname{diag}\Big(\mathbf{\Psi}^f \mathbf{1}\Big) - \mathbf{\Psi}^f \mathbf{\Pi}^f\Big) + (1-\varepsilon)\Big(\operatorname{diag}(\mathbf{\Psi}^x \mathbf{1}) - \mathbf{\Psi}^x \mathbf{\Pi}^x\Big).\end{aligned}$$

Turn to the labor market. The log-linearized intratemporal Euler condition for the labor supply in occupation ℓ country n is

$$\ln L_{n\ell} = \psi(\ln W_{n\ell} - \ln P_n) + (1+\psi)\ln \xi_{n\ell}.$$

The labor demand for occupation ℓ in sector j country n, $L_{nj\ell}$, is

$$\ln L_{nj\ell} = \ln Y_{nj} + \ln P_{nj} - \ln W_{n\ell} + (1-\kappa)\sum_{\iota} \pi^{\mathcal{O}}_{nj\iota}(\ln W_{n\ell} - \ln W_{n\iota})$$

The labor market clearing condition for occupation ℓ is

$$\ln L_{n\ell} = \sum_{j=1}^{N} \Lambda_{nj\ell} \ln L_{nj\ell}$$

Equating labor demand and labor supply leads to

$$\psi(\ln W_{n\ell} - \ln P_n) + (1+\psi)\ln \xi_{n\ell} = \sum_{j=1}^{N} \Lambda_{nj\ell}(\ln Y_{nj} + \ln P_{nj}) - \ln W_{n\ell} + \sum_{j=1}^{N}\sum_{\iota=1}^{\mathcal{O}} (1-\kappa)\Lambda_{nj\ell}\pi^{\mathcal{O}}_{nj\ell}(\ln W_{n\ell} - \ln W_{n\iota}) \tag{A.4}$$

[1] The + sign stands for the Moore-Penrose inverse. The non-invertibility is a consequence of the fact that the vector of prices is only defined up to a numeraire.

In matrix form, it can be written as

$$\mathbf{\Delta} \ln \mathbf{W} = -\ln \boldsymbol{\xi} + \frac{1}{1+\psi}\mathbf{\Lambda}(\ln \mathbf{Y} + \ln \mathbf{P}) + \frac{\psi}{1+\psi}(\mathbf{1} \otimes \mathbf{\Pi}^f) \ln \mathbf{P} \tag{A.5}$$

where

$$\mathbf{\Delta} = \frac{\kappa+\psi}{1+\psi}\mathbf{I} + \frac{1-\kappa}{1+\psi}\mathbf{\Lambda}\mathbf{\Pi}^{\mathcal{O}}. \tag{A.6}$$

The production function in sector j implies that

$$\ln Y_{nj} = \eta_j(1-\alpha_j) \ln H_{nj} + (1-\eta_j) \ln X_{nj}.$$

The first-order conditions with respect to the composite labor and intermediate goods lead to

$$\begin{aligned} \ln H_{nj} &= \ln Y_{nj} + \ln P_{nj} - \sum_{\iota} \pi^{\mathcal{O}}_{nj\iota} \ln W_{n\iota} \\ \ln X_{nj} &= \ln Y_{nj} + \ln P_{nj} - \sum_{k,i} \pi^{x}_{ki,nj} \ln P_{ki}. \end{aligned}$$

Combining the production function and the first-order conditions give

$$\ln \mathbf{Y} = \Big(\boldsymbol{\eta} - (\mathbf{I}-\boldsymbol{\eta})(\mathbf{I}-\mathbf{\Pi}^x)\boldsymbol{\mathcal{P}}\Big)^{-1} \boldsymbol{\eta}(\mathbf{I}-\boldsymbol{\alpha}) \ln \mathbf{H} \tag{A.7}$$

$$\ln \mathbf{H} = \ln \mathbf{Y} + \ln \mathbf{P} - \mathbf{\Pi}^{\mathcal{O}} \ln \mathbf{W}. \tag{A.8}$$

The influence matrix can be obtained by combining conditions (A.5) to (A.8):

$$\ln \mathbf{H} = \left(\mathbf{I} - \left(\mathbf{I} + \boldsymbol{\mathcal{P}} - \frac{1}{1+\psi}\mathbf{\Pi}^{\mathcal{O}}\mathbf{\Delta}^{-1}\left(\mathbf{\Lambda} + \mathbf{\Lambda}\boldsymbol{\mathcal{P}} + \psi\mathbf{\Pi}^f\boldsymbol{\mathcal{P}}\right)\right)\left(\boldsymbol{\eta} - (\mathbf{I}-\boldsymbol{\eta})(\mathbf{I}-\mathbf{\Pi}^x)\boldsymbol{\mathcal{P}}\right)^{-1} \boldsymbol{\eta}(\mathbf{I}-\boldsymbol{\alpha})\right)^{-1} \mathbf{\Pi}^{\mathcal{O}}\mathbf{\Delta}^{-1} \ln \boldsymbol{\xi}.$$

A.2 Alternative Shock Specification

Suppose the labor supply shocks appear as efficiency shocks as in equation (2). The household problem becomes

$$\max_{\mathcal{F}_n, \{L_{n\ell}\}} \mathcal{F}_n - \sum_{\ell=1}^{\mathcal{O}} \frac{1}{1+\frac{1}{\psi}} L_{n\ell}^{1+\frac{1}{\psi}}$$

subject to

$$P_n \mathcal{F}_n = \sum_{\ell=1}^{\mathcal{O}} W_{n\ell}\xi_{n\ell}L_{n\ell} + \sum_{j=1}^{J} R_{nj}K_{nj}$$

where $\xi_{n\ell}$ stands for the efficiency units. With this specification, the optimal labor supply condition becomes

$$L_{n\ell}^{\frac{1}{\psi}} = \frac{W_{n\ell}}{P_n}\xi_{n\ell}.$$

Now consider the log-linearized conditions in labor markets. The changes of labor supply in occupation ℓ country n is

$$\ln L_{n\ell} = \psi(\ln W_{n\ell} - \ln P_n + \ln \xi_{n\ell}).$$

The labor demand for occupation ℓ in sector j country n, $L_{nj\ell}$, is the same as before (but now the demand $\ln L_{nj\ell}$ refers to efficiency units rather than physical hours):

$$\ln L_{nj\ell} = \ln Y_{nj} + \ln P_{nj} - \ln W_{n\ell} + (1-\kappa) \sum_{\iota} \pi^{\mathcal{O}}_{nj\iota}(\ln W_{n\ell} - \ln W_{n\iota}).$$

Note that the effective total labor supply for occupation ℓ now becomes $\ln L_{n\ell} + \ln \xi_{n\ell}$, which leads to the following labor market clearing condition

$$\ln L_{n\ell} + \ln \xi_{n\ell} = \sum_{j=1}^{N} \Lambda_{nj\ell} \ln L_{nj\ell}.$$

Equating labor demand and labor supply leads to the following condition for wage movements

$$\psi(\ln W_{n\ell} - \ln P_n) + (\psi+1)\ln \xi_{n\ell} = \sum_{j=1}^{N} \Lambda_{nj\ell}(\ln Y_{nj} + \ln P_{nj}) - \ln W_{n\ell} + \sum_{j=1}^{N}\sum_{\iota=1}^{\mathcal{O}} (1-\kappa)\Lambda_{nj\ell}\pi^{\mathcal{O}}_{nj\ell}(\ln W_{n\ell} - \ln W_{n\iota}) \tag{A.9}$$

The condition for the wage movement (A.9) is exactly the same condition (A.4) for the model where the shocks appear as labor disutility. Therefore, the responses of outputs, GDP, and total labor demand at each sector will be identical under these two labor shock formulations.

A.3 Changes in Real Consumption

Due to the balanced trade assumption, we have $P_n\mathcal{F}_n = \left(\sum_j P_{nj}Y_{nj} - P^x_{nj}X_{nj}\right)$. The change in real consumption is

$$\begin{aligned}
\ln \mathcal{F}_n &= \sum_j \left(\frac{P_{nj}Y_{nj}}{V_n}(\ln Y_{nj} + \ln P_{nj}) - \frac{P^x_{nj}X_{nj}}{V_n}(\ln X_{nj} + \ln P^x_{nj}) \right) - \ln P_n \\
&= \sum_j \frac{P_{nj}Y_{nj}}{V_n} \left(\ln Y_{nj} + \ln P_{nj} - \frac{P^x_{nj}X_{nj}}{P_{nj}Y_{nj}}(\ln X_{nj} + \ln P^x_{nj}) \right) - \ln P_n \\
&= \sum_j \frac{P_{nj}Y_{nj}}{V_n} \left(\ln Z_{njt} + \eta_j\alpha_j \ln H_{njt} + (1-\eta_j)\ln X_{njt} + \ln P_{nj} - (1-\eta_j)\ln X_{nj} - (1-\eta_j)\ln P^x_{nj} \right) - \ln P_n \\
&= \ln V_n + \sum_j \frac{P_{nj}Y_{nj}}{V_n} \left(\ln P_{nj} - (1-\eta_j)\ln P^x_{nj} \right) - \ln P_n.
\end{aligned}$$

That is, the change in real consumption equals to the change in real GDP plus the change in relative prices.

Appendix B Data and Robustness

B.1 Country, Sector, and Occupations Sample

Table A1 lists the occupations and their work-from-home intensities. Table A2 lists the countries in our sample, together with the country codes used in the graphs to report results. Table A3 displays the sectors with their corresponding ISIC rev. 4 composition. Table A4 lists the sectoral work-from-home shares.

TABLE A1: Occupation Sample

Code	Description	Work from home intensity
11	Management Occupations	0.900
13	Business and Financial Operations Occupations	0.895
15	Computer and Mathematical Occupations	1.000
17	Architecture and Engineering Occupations	0.645
19	Life, Physical, and Social Science Occupations	0.606
21	Community and Social Service Occupations	0.404
23	Legal Occupations	0.971
25	Education, Training, and Library Occupations	0.989
27	Arts, Design, Entertainment, Sports, and Media Occupations	0.823
29	Healthcare Practitioners and Technical Occupations	0.051
31	Healthcare Support Occupations	0.022
33	Protective Service Occupations	0.049
35	Food Preparation and Serving Related Occupations	0.000
37	Building and Grounds Cleaning and Maintenance Occupations	0.000
39	Personal Care and Service Occupations	0.248
41	Sales and Related Occupations	0.485
43	Office and Administrative Support Occupations	0.697
45	Farming, Fishing, and Forestry Occupations	0.021
47	Construction and Extraction Occupations	0.002
49	Installation, Maintenance, and Repair Occupations	0.004
51	Production Occupations	0.009
53	Transportation and Material Moving Occupations	0.058
99	Health Composite	0.254

Notes: This table list the occupations in our quantitative analysis. The health composite occupation is composed of the mix of occupations used by the Health *sector*. We display the share of work that can be done from home in this table for the health composite, but we do not use it in our quantitative analysis as health workers are assumed not to be subject to the lockdown.

Table A2: Country Sample

Code	Name	Code	Name
ARG	Argentina	KAZ	Kazakhstan
AUS	Australia	KHM	Cambodia
AUT	Austria	KOR	Korea
BEL	Belgium	LTU	Lithuania
BGR	Bulgaria	LUX	Luxembourg
BRA	Brazil	LVA	Latvia
BRN	Brunei Darussalam	MAR	Morocco
CAN	Canada	MEX	Mexico
CHE	Switzerland	MLT	Malta
CHL	Chile	MYS	Malaysia
CHN	China	NLD	Netherlands
COL	Colombia	NOR	Norway
CRI	Costa Rica	NZL	New Zealand
CYP	Cyprus	PER	Peru
CZE	Czech Republic	PHL	Philippines
DEU	Germany	POL	Poland
DNK	Denmark	PRT	Portugal
ESP	Spain	ROU	Romania
EST	Estonia	RUS	Russia
FIN	Finland	SAU	Saudi Arabia
FRA	France	SGP	Singapore
GBR	United Kingdom	SVK	Slovakia
GRC	Greece	SVN	Slovenia
HKG	Hong Kong	SWE	Sweden
HRV	Croatia	THA	Thailand
HUN	Hungary	TUN	Tunisia
IDN	Indonesia	TUR	Turkey
IND	India	TWN	Taiwan
IRL	Ireland	USA	United States
ISL	Iceland	VNM	Viet Nam
ISR	Israel	ZAF	South Africa
ITA	Italy		
JPN	Japan	ROW	Rest of the World

Table A3: Sector Sample

Code	Description	Sector grouping	ISIC 2d codes
01T03	Agriculture, forestry and fishing	G	01, 02, 03
05T09	Mining and Quarrying	G	05, 06,07, 08, 09
10T12	Food products, beverages and tobacco	G	10, 11, 12
13T15	Textiles, wearing apparel, leather and related products	G	13, 14, 15
16	Wood and products of wood and cork	G	16
17T18	Paper products and printing	G	17, 18
19	Coke and refined petroleum products	G	19
20T21	Chemicals and pharmaceutical products	G	20, 21
22	Rubber and plastic products	G	22
23	Other non-metallic mineral products	G	23
24	Basic metals	G	24
25	Fabricated metal products	G	25
26	Computer, electronic and optical products	G	26
27	Electrical equipment	G	27
28	Machinery and equipment, nec	G	28
29	Motor vehicles, trailers and semi-trailers	G	29
30	Other transport equipment	G	30, 31, 32, 33
31T33	Other manufacturing; repair and installation of machinery and eqpmt		G
35T39	Electricity, gas, water, waste	S	35, 36, 37, 38, 39
41T43	Construction	S	41, 42, 43
45T47	Wholesale and retail trade; repair of motor vehicles	S	45, 46, 47
49T53	Transportation and storage	S	49, 50, 51, 52, 53
55T56	Accommodation and food services	S	55, 56
58T60	Publishing, audiovisual and broadcasting activities	S	58, 59, 60
61	Telecommunications	S	61
62T63	IT and other information services	S	62, 63
64T66	Financial and insurance activities	S	64, 65, 66
68	Real estate activities	S	68
69T82	Other business sector services	S	69, 70, 71, 72, 73, 74, 75 77, 78, 79, 80, 81, 82
84	Public admin. and defense; compulsory social security	S	84
85	Education	S	85
86T88	Human health and social work	H	86, 87, 88
90T98	Arts, entertainment, other services, households activities	S	90, 91, 92, 93,94 95, 96,97, 98

Notes: This table list the sectors in our quantitative analysis. The third column displays the sector classification into three groups: goods (G), services (S) and health (H).

Table A4: Sectoral Shares of Work that Can Be Done at Home

Sector code	Description	Work from home share	Exposure to work from home
01T03	Agriculture, forestry and fishing	0.134	0.113
05T09	Mining and Quarrying	0.363	0.134
10T12	Food products, beverages and tobacco	0.240	0.102
13T15	Textiles, wearing apparel, leather and related products	0.332	0.146
16	Wood and products of wood and cork	0.232	0.131
17T18	Paper products and printing	0.324	0.122
19	Coke and refined petroleum products	0.349	0.032
20T21	Chemicals and pharmaceutical products	0.471	0.069
22	Rubber and plastic products	0.296	0.132
23	Other non-metallic mineral products	0.291	0.133
24	Basic metals	0.268	0.088
25	Fabricated metal products	0.305	0.164
26	Computer, electronic and optical products	0.667	0.064
27	Electrical equipment	0.420	0.112
28	Machinery and equipment, nec	0.396	0.132
29	Motor vehicles, trailers and semi-trailers	0.230	0.112
30	Other transport equipment	0.496	0.109
31T33	Other manufacturing; repair and installation of machinery and equipment	0.295	0.171
35T39	Electricity, gas, water, waste	0.377	0.085
41T43	Construction	0.242	0.163
45T47	Wholesale and retail trade; repair of motor vehicles	0.475	0.162
49T53	Transportation and storage	0.299	0.159
55T56	Accommodation and food services	0.111	0.258
58T60	Publishing, audiovisual and broadcasting activities	0.808	0.047
61	Telecommunications	0.599	0.060
62T63	IT and other information services	0.903	0.033
64T66	Financial and insurance activities	0.786	0.054
68	Real estate activities	0.577	0.017
69T82	Other business sector services	0.638	0.117
84	Public admin. and defense; compulsory social security	0.485	0.259
85	Education	0.828	0.112
86T88	Human health and social work	0.247	0.377
90T98	Arts, entertainment, other services, households activities	0.479	0.181
Average		0.423	0.126

Notes: The first column reports the share of the labor input that can be provided from home, by sector. The sectoral measure is computed as an average of **?**'s work from home intensity at the occupational level, weighted using sectoral level expenditure shares on each occupation. The second column reports the sectoral exposure, defined as the share of total output accounted for by labor that cannot be done from home, $(1-\alpha_j)\eta_j(1-\texttt{work from home}_j)$.

B.2 Curving of the Stringency Index

We obtained Industrial Production (IP) data up to April 2020 for 39 of our 64 countries from the OECD, Eurostat, and some national statistical agencies (for Argentina, India, Taiwan, and Australia). The April 2020 IP contraction is defined as the log difference with respect to the maximum 3-month moving average in the previous 12 months (meant to capture contraction relative to the peak). In practice, we drop the countries with the three biggest and smallest falls to avoid extreme values in the lognormal fit.

To curve the Government Response Tracker (GRT), we use the inverse CDF of a lognormal distribution with parameters μ and σ, and attribute a stringency to each country equal to the quantile corresponding to its empirical GRT CDF. We then solve for the change in manufacturing output using the resulting labor supply shock, and target the average change in IP across countries, and the range between the maximal and minimal change. The curving results in a lognormal fit with parameters $\mu = -0.302$ and $\sigma = 0.531$. It leaves the average stringency virtually unchanged at 0.805 instead of 0.806, but increases the dispersion.

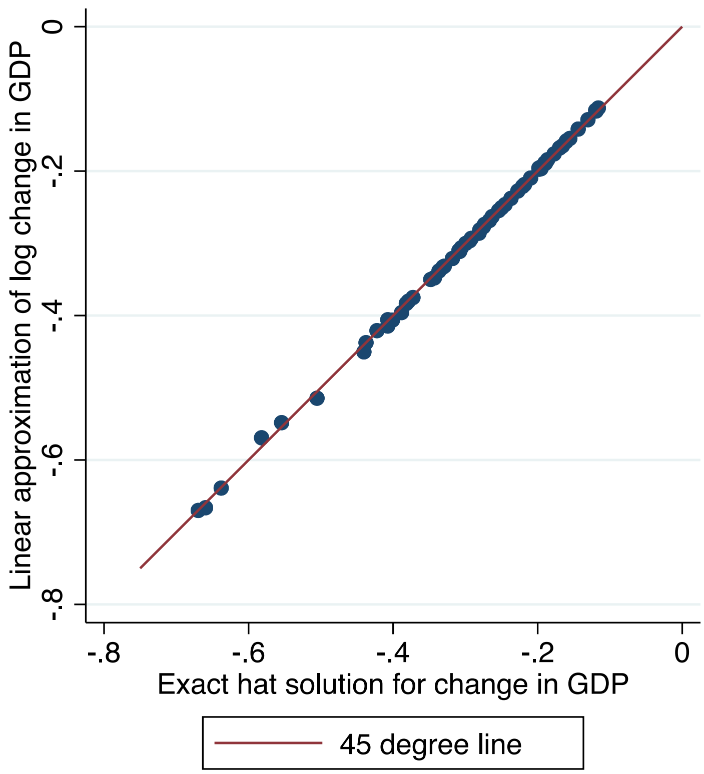
B.3 Additional Results

Fit of the linear approximation Figure A1 assesses the fit of the linear approximation used in the main results by plotting the baseline changes in GDP against changes in GDP computed using exact hat algebra following Dekle, Eaton, and Kortum (2008)'s procedure. The dots all lie close to the 45 degree line, implying that the linear approximation is a good fit. Table A7 summarizes the average declines in GDP in the baseline and under alternative elasticities.

Country-level results Tables A5 and A6 display the country-specific results of our baseline trade scenario and our main renationalization counterfactual.

Reopening Figure A2 displays the entire matrix of other countries ("destination")' GDP changes when a "source" country reopens.

Figure A1: Fit of the Linear Approximation



Notes: This figure shows a scatterplot of the reaction of real GDP computed using the linear approximation against that computed using exact hat algebra following Dekle, Eaton, and Kortum (2008)'s procedure.

Table A5: Country-level detailed results (1)

Country	Trade ($\ln V_n$)	Transmission ($\mathcal{T}_n$)	Domestic shock ($\mathcal{D}_n$)	Renationalized ($\ln V_n^R$)
ARG	-0.666	-0.029	-0.638	-0.732
AUS	-0.165	-0.047	-0.118	-0.146
AUT	-0.296	-0.063	-0.233	-0.301
BEL	-0.251	-0.069	-0.182	-0.247
BGR	-0.194	-0.069	-0.125	-0.164
BRA	-0.219	-0.037	-0.182	-0.215
BRN	-0.158	-0.071	-0.087	-0.119
CAN	-0.190	-0.054	-0.135	-0.177
CHE	-0.210	-0.059	-0.150	-0.200
CHL	-0.184	-0.068	-0.116	-0.158
CHN	-0.293	-0.027	-0.266	-0.299
COL	-0.380	-0.058	-0.322	-0.417
CRI	-0.246	-0.056	-0.191	-0.242
CYP	-0.406	-0.066	-0.340	-0.441
CZE	-0.277	-0.064	-0.213	-0.269
DEU	-0.176	-0.054	-0.122	-0.150
DNK	-0.159	-0.058	-0.101	-0.129
ESP	-0.311	-0.054	-0.257	-0.316
EST	-0.238	-0.072	-0.165	-0.221
FIN	-0.142	-0.053	-0.089	-0.114
FRA	-0.348	-0.052	-0.296	-0.366
GBR	-0.189	-0.054	-0.135	-0.171
GRC	-0.286	-0.051	-0.234	-0.275
HKG	-0.168	-0.056	-0.112	-0.142
HRV	-0.514	-0.065	-0.449	-0.552
HUN	-0.228	-0.070	-0.158	-0.202
IDN	-0.274	-0.046	-0.228	-0.274
IND	-0.670	-0.042	-0.628	-0.742
IRL	-0.306	-0.060	-0.246	-0.360
ISL	-0.129	-0.053	-0.076	-0.095

Notes: This table reports the country-level GDP changes (first column), decomposed into transmission (second column) and own shock (third column) for the baseline scenario, and for the renationalized scenario (last column). Part 1.

Table A6: Country-level detailed results (2)

Country	Trade ($\ln V_n$)	Transmission ($\mathcal{T}_n$)	Domestic shock ($\mathcal{D}_n$)	Renationalized ($\ln V_n^R$)
ISR	-0.396	-0.053	-0.343	-0.427
ITA	-0.415	-0.045	-0.369	-0.437
JPN	-0.117	-0.038	-0.079	-0.092
KAZ	-0.350	-0.067	-0.283	-0.376
KHM	-0.196	-0.066	-0.129	-0.168
KOR	-0.277	-0.047	-0.229	-0.285
LTU	-0.333	-0.073	-0.260	-0.341
LUX	-0.197	-0.060	-0.136	-0.199
LVA	-0.168	-0.067	-0.101	-0.131
MAR	-0.438	-0.070	-0.368	-0.475
MEX	-0.268	-0.049	-0.220	-0.271
MLT	-0.255	-0.083	-0.172	-0.259
MYS	-0.189	-0.058	-0.130	-0.168
NLD	-0.221	-0.057	-0.164	-0.212
NOR	-0.197	-0.059	-0.138	-0.181
NZL	-0.450	-0.041	-0.410	-0.487
PER	-0.548	-0.062	-0.486	-0.636
PHL	-0.639	-0.049	-0.590	-0.719
POL	-0.310	-0.065	-0.245	-0.318
PRT	-0.348	-0.066	-0.281	-0.352
ROU	-0.332	-0.060	-0.272	-0.343
RUS	-0.321	-0.044	-0.277	-0.335
SAU	-0.406	-0.078	-0.328	-0.479
SGP	-0.281	-0.060	-0.221	-0.300
SVK	-0.338	-0.074	-0.265	-0.350
SVN	-0.383	-0.077	-0.306	-0.409
SWE	-0.113	-0.056	-0.057	-0.072
THA	-0.300	-0.059	-0.241	-0.304
TUN	-0.421	-0.083	-0.338	-0.457
TUR	-0.250	-0.051	-0.199	-0.238
TWN	-0.116	-0.055	-0.061	-0.081
USA	-0.155	-0.035	-0.120	-0.137
VNM	-0.569	-0.063	-0.507	-0.632
ZAF	-0.375	-0.062	-0.313	-0.397

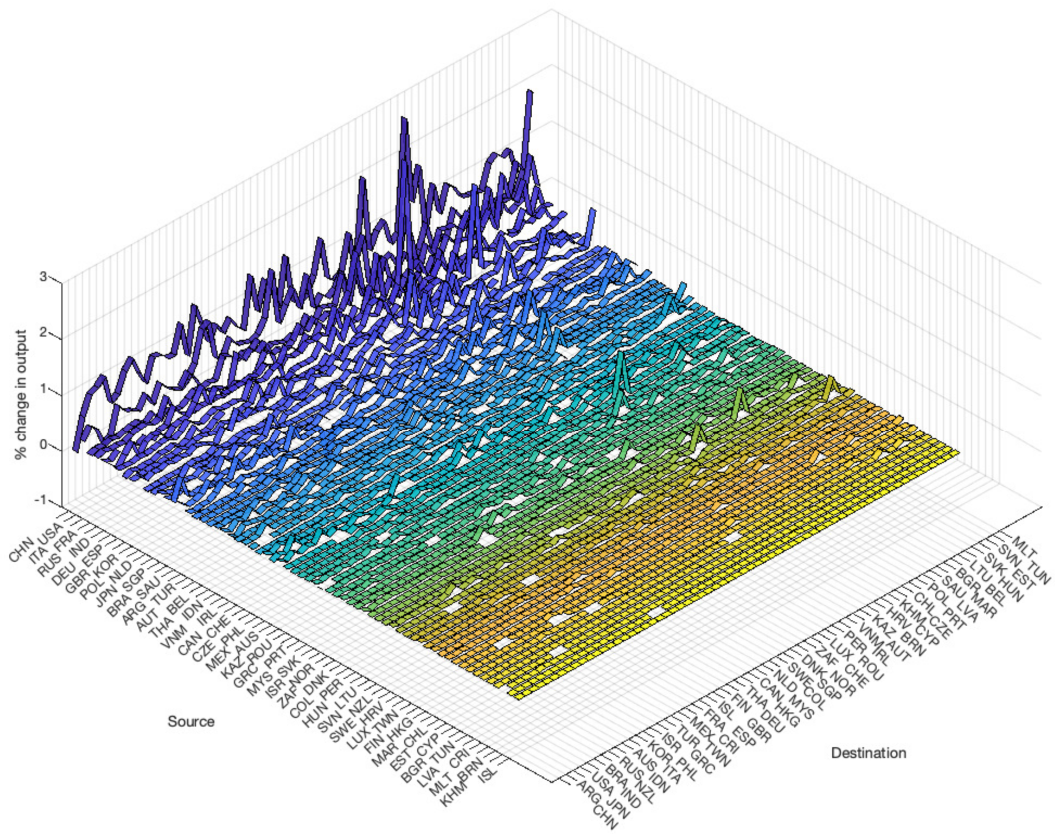
Notes: This table reports the country-level GDP changes (first column), decomposed into transmission (second column) and own shock (third column) for the baseline scenario, and for the renationalized scenario (last column). Part 2.

Table A7: Alternative Quantifications Summary

	Average drop in GDP		Share of	$\ln V - \ln V^R$	Corr. with
	Trade	Renationalized	trans.		baseline
Baseline	-29.6%	-30.2%	23.3%	0.6%	–
	(13.3%)	(16.3%)	(10.2%)	(3.2%)	
Baseline, real consumption*	-27.6%	-30.2%	64.3%	2.6%	0.98
	(7.3%)	(16.3%)	(16.5%)	(9.6%)	
Baseline, interm. renationalization	-29.6%	-29.9%	23.3%	0.3%	0.98
	(13.3%)	(15.2%)	(10.2%)	(2.0%)	
Country specific WFH	-30.9%	-31.5%	24.7%	0.5%	0.96
	(16.5%)	(20.1%)	(12.0%)	(3.7%)	
Varying the Frisch elasticity					
$\psi = 1$	-26.5%	-26.8%	17.2%	0.3%	0.99
	(12.7%)	(14.6%)	(8.1%)	(2.0%)	
$\psi = 0.2$	-21.9%	-21.8%	5.6%	-0.1%	0.75
	(11.6%)	(12.0%)	(3.1%)	(0.7%)	
$\psi = 0.01$	-20.3%	-20.0%	0.3%	-0.2%	0.05
	(11.1%)	(11.0%)	(0.2%)	(0.5%)	
Additional sensitivity					
$\rho = 1$	-29.6%	-30.0%	21.9%	0.5%	0.99
	(13.5%)	(16.3%)	(9.8%)	(2.9%)	
$\varepsilon = 1$	-30.1%	-30.3%	15.7%	0.2%	0.98
	(14.5%)	(16.4%)	(7.8%)	(2.0%)	
$\kappa = 0.2$	-29.6%	-30.2%	23.3%	0.6%	0.99
	(13.4%)	(16.3%)	(10.2%)	(3.1%)	
$\gamma = 0.5$	-27.7%	-29.4%	34.6%	1.7%	0.82
	(10.9%)	(17.1%)	(12.7%)	(8.5%)	
Unscaled GRT	-30.2%	-30.0%	22.6%	-0.2%	0.82
	(4.8%)	(5.9%)	(5.9%)	(1.3%)	
Sector-specific labor	-29.5%	-29.8%	23.3%	0.3%	0.99
	(13.1%)	(15.9%)	(10.0%)	(3.0%)	

Notes: *: The numbers in this row are for real consumption rather than GDP. This table reports summary statistics of the results under alternative elasticities. The table reports cross-country mean changes in GDP under trade (first column) and renationalized supply chains (second column), the share of transmission under trade (third column) and the difference in GDP change between trade and renationalized scenario (fourth column). In parentheses under each mean is the standard deviation in that value across countries. The last column reports the correlation between the robustness $\ln V - \ln V^R$ and the baseline $\ln V - \ln V^R$ across countries.

Figure A2: GDP Changes due to Unilateral Reopening



Notes: This figure displays the change in real GDP in countries on the "Destination" axis resulting from ending the lockdowns of the country on the "Source" axis. Impacts of ending lockdowns on own GDP are omitted.