



EUROPEAN CENTRAL BANK

EUROSYSTEM

Coping with a disrupted world: towards a fragmentation of international trade?



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- Sequence of **supply disruptions** in recent years, which might encourage **fragmentation**
- Fragmentation not (yet) visible in aggregate data, while survey data suggest firms are taking measures to foster **supply chain resilience**.
- Possible de-risking strategies:
 - ✓ **Diversifying** sourcing across more countries
 - ✓ **Rebalancing** foreign exposure
 - ✓ Switch to domestic suppliers (**reshoring**)
 - ✓ Hold larger **inventories**
- Each of this strategies may lead to different economic outcomes → granular information allows their early detection in the data

Macro

- Limited literature on de-globalisation and mostly related to the US-China trade war (Fajgelbaum et al., 2022)
- The majority of studies are model-based and focus on the possible economic and welfare costs of fragmentation rather than on its occurrence (Attinasi et al., 2023; Bolhuis et al., 2023; OECD, 2021; Aiyar et al., 2023; Javorcik, 2022; Cerdeiro et al., 2021; Goes and Bekkers, 2022, Campos et al., 2023)
- However, trade fragmentation is now attracting interests from a policy perspective

Macro - Policy work

- [IMF Blog \(January 2023\)](#): surge in trade restrictions over the last years amid trade tensions between the US and China. Covid-19 and the war in Ukraine led to more supply-chain disruptions → tendency towards fragmentation
- [OECD Blog \(July 2023\)](#): US is changing its trading patterns by shifting the type of far-shoring (replacing China with other Asian economies), while the EU is expanding far-shoring
- [ECB Blog \(July 2023\)](#): no evidence (yet) of trade fragmentation in the euro area

Micro

- Relatively less explored
- EBRD (2022), ECB (2023): Survey-based evidence suggests that firms are turning to more suppliers and increasing their inventories.
- De Lucio et al. (2023): using Spanish data on manufacturers involved in GVCs find no evidence of a shift towards sourcing from countries that are geographically or geopolitically closer. On average, increasing stock of intermediates is the dominant strategy.
- Di Stefano et al. (2022): using data on Italian multinational firms find that the pandemic did not trigger significant reshoring.

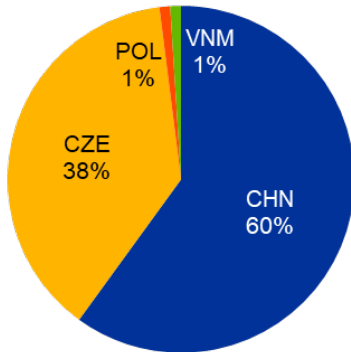
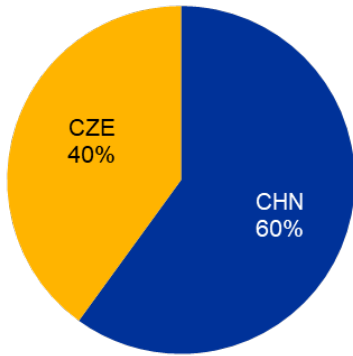
Overall

- Strong interest, especially from a policy perspective
- Significant results on the possible implications of trade fragmentation
- But no significant evidence (so far) on whether and how the EU is heading towards fragmentation

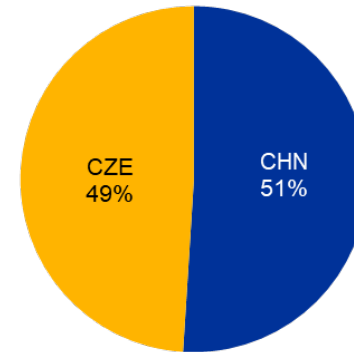
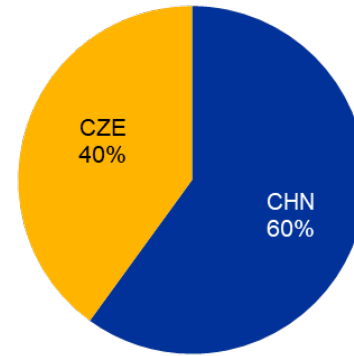
- Monthly firm-product-country level data for France, from Customs until end-2022, import flows only. We focus on the main imported product of each firm.
- Focus on:
 - ✓ **Diversification** of suppliers (i.e. increasing the number of sourcing countries)
 - ✓ **Rebalancing** country exposure (i.e. reduce import share of the main sourcing country)
- Our **policy questions**:
 - ✓ Is diversification and/or rebalancing happening?
 - ✓ Does it have a geopolitical dimension?

Diversification and rebalancing

Diversification

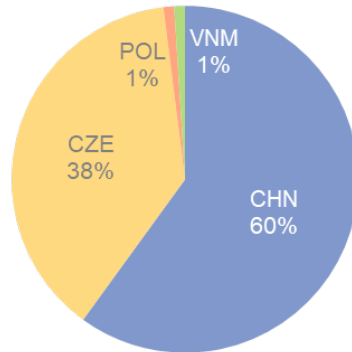
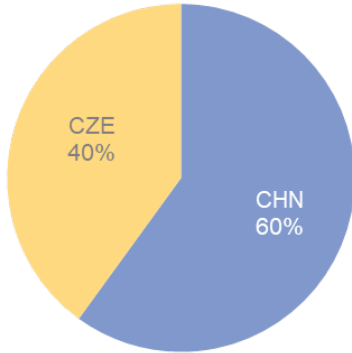


Rebalancing

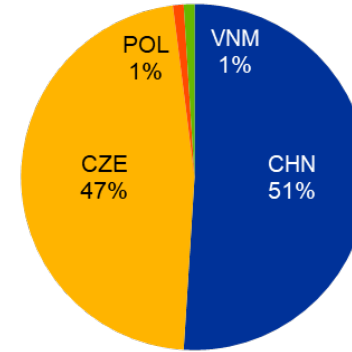
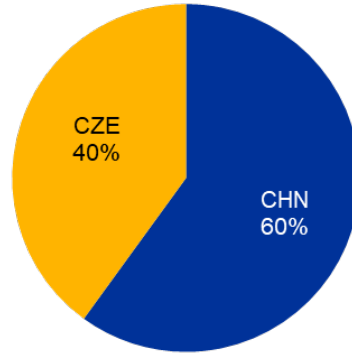


Diversification and rebalancing are not mutually exclusive

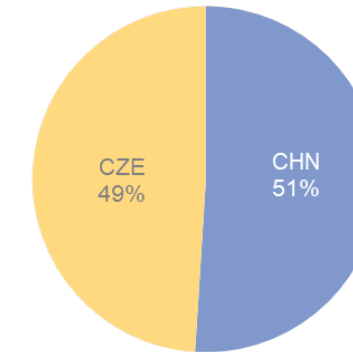
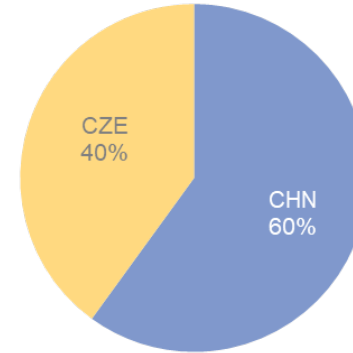
Diversification



Combining



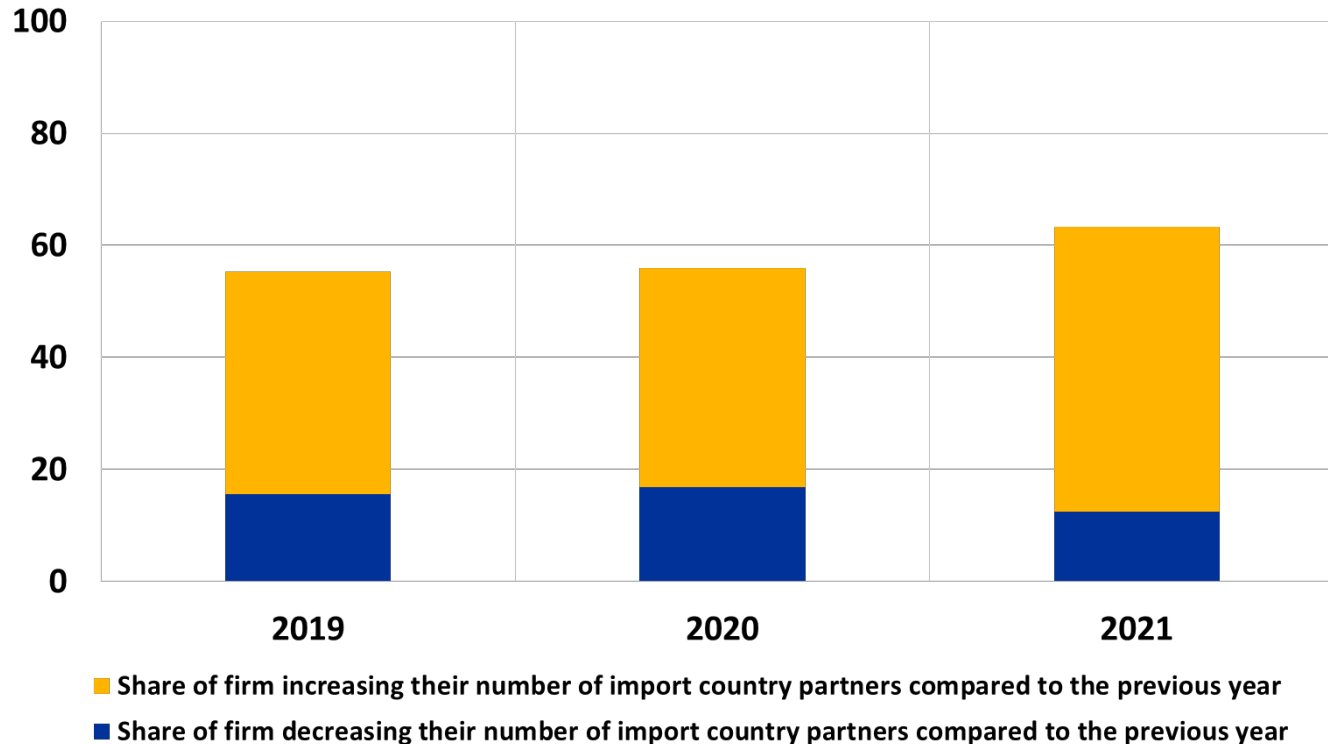
Rebalancing



- **Methodology:** event study
- **Our sample:** continuous importers between January and December 2019
- **Treatment period:** January 2020 – December 2022
- **Treated group:** firms importing their core product from outside the [European Union](#) before the pandemic

Diversification

Development in number of sourcing country *(percentage of total firms)*

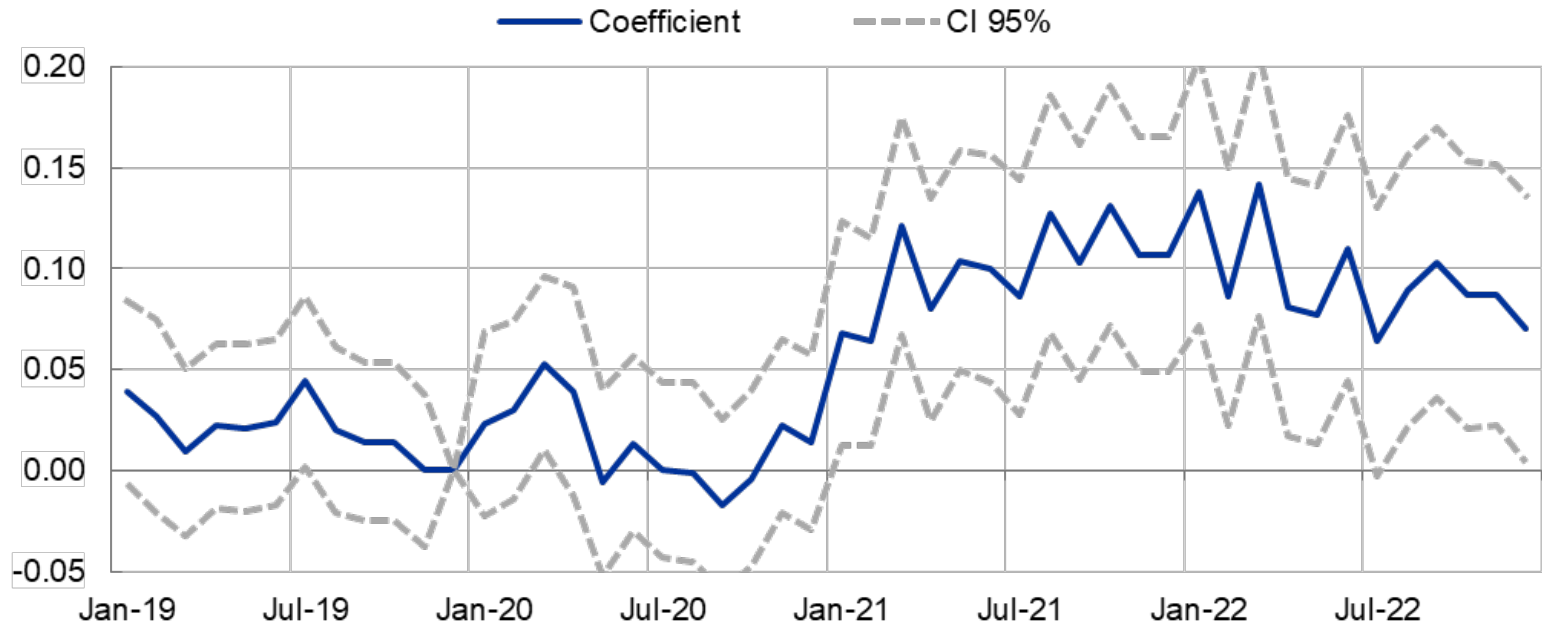


Equation for the diversification equation

$$\text{number country suppliers}_{ipt} = \sum_{k=-2}^7 \beta_k \text{time dummy}_{kt} \times \text{non-EU dummy}_{ip} + FE_i + FE_{pt} + \varepsilon_{it}$$

- Estimate the number of suppliers of firm i for product p at time t using fixed effects
- Augment with a dummy for those products whose main sourcing country was non-EU in 2016
- Time varying coefficients β_k measure how much the number of suppliers has increased for those firms originally sourcing from non-EU relative to other firms

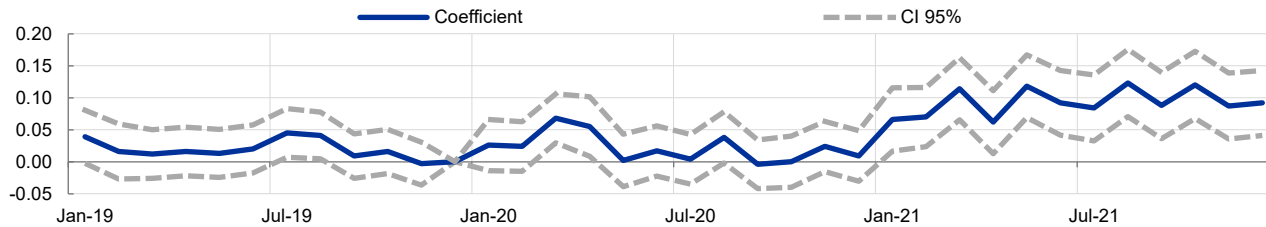
Main results for diversification



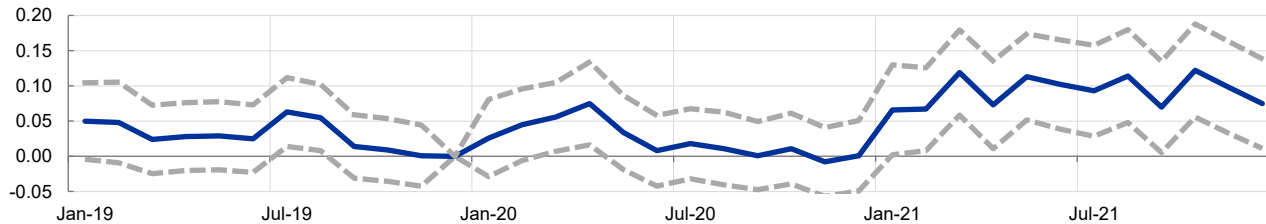
Note: Only continuous importers in the 12 months immediately before the crisis are retained. Non-EU dummy_{ip} equals 1 if the firm's main sourcing country for its main HS6 product in 2019 was outside the EU. The reference point is December 2019.

Diversification – robustness checks

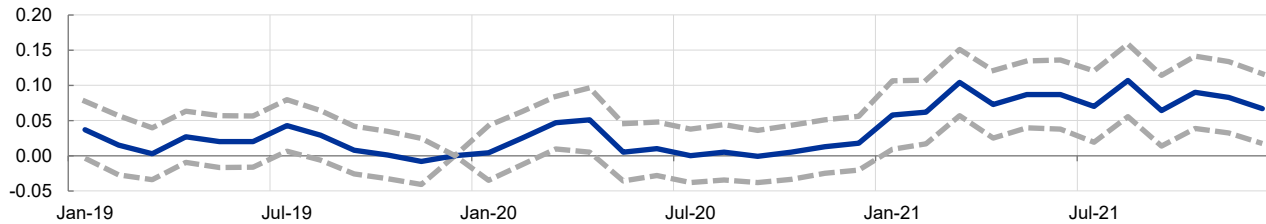
3 years



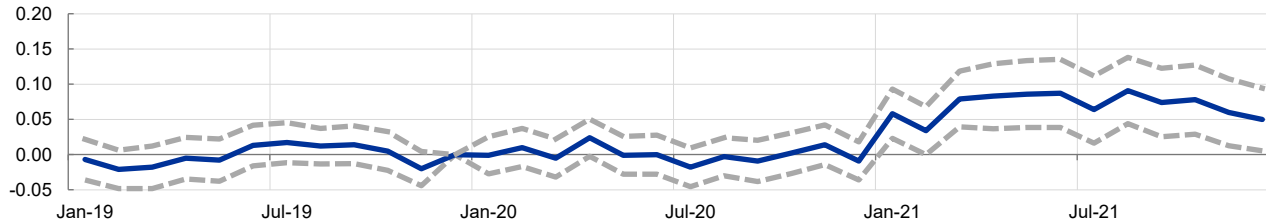
Keep GVC firms



Drop energy

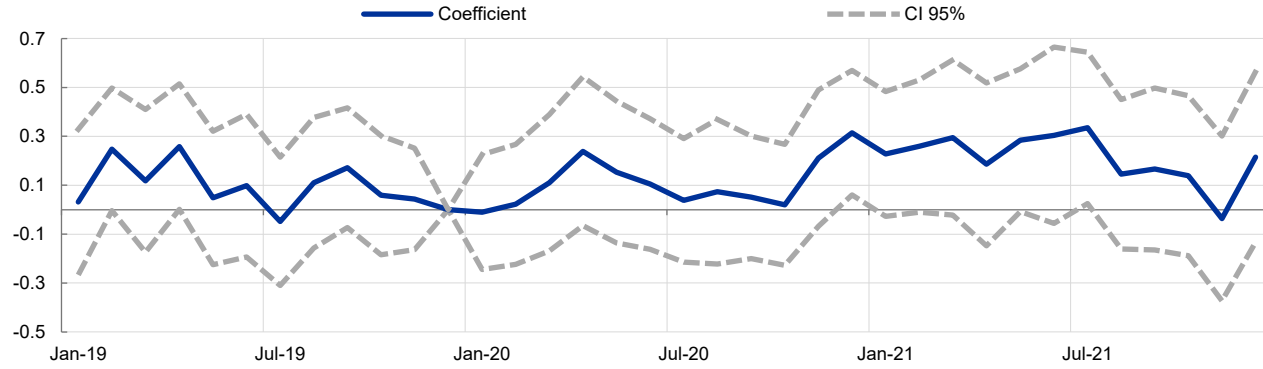


One country in 2019

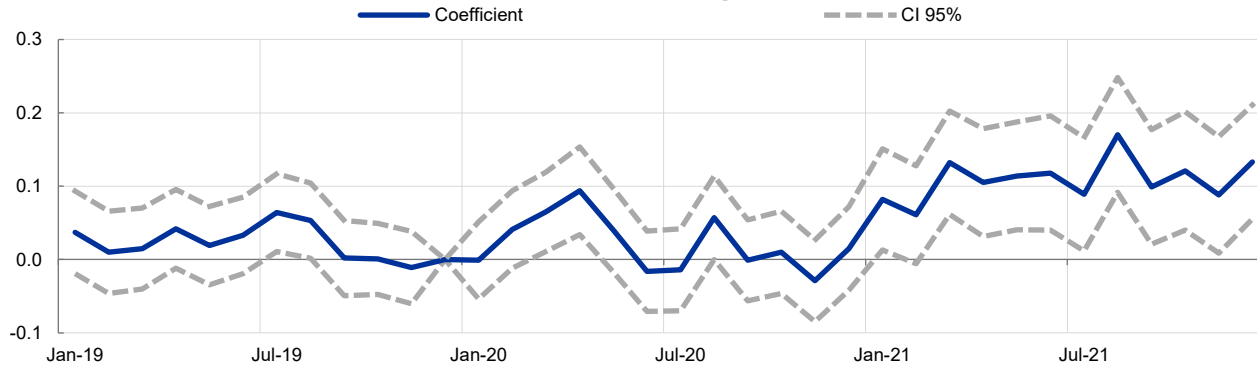


Diversification – robustness checks – by type of goods

Strategic goods

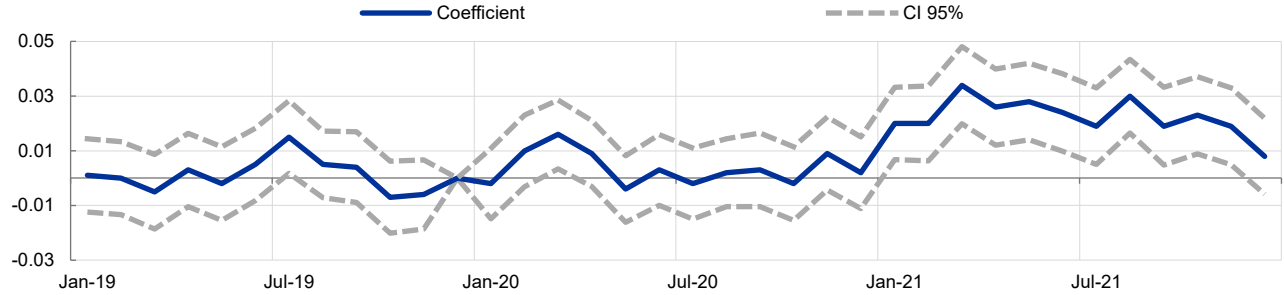


Intermediate goods

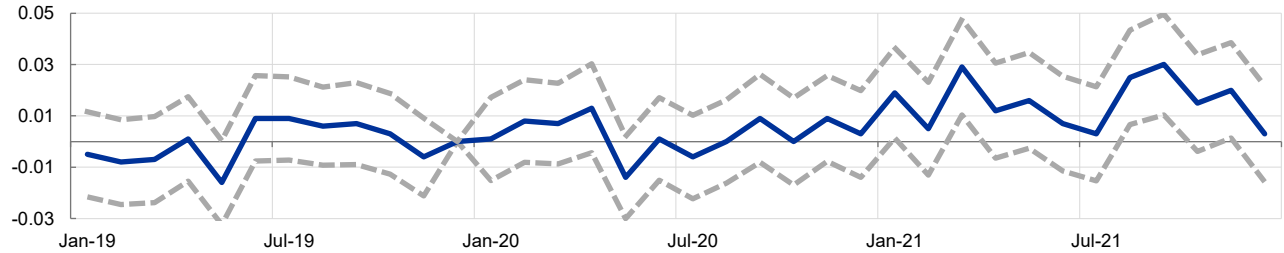


Diversification – Linear probability model

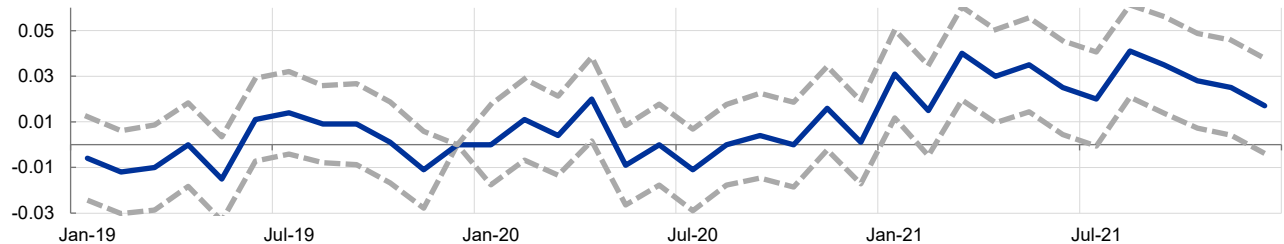
General



Plus one sourcing country



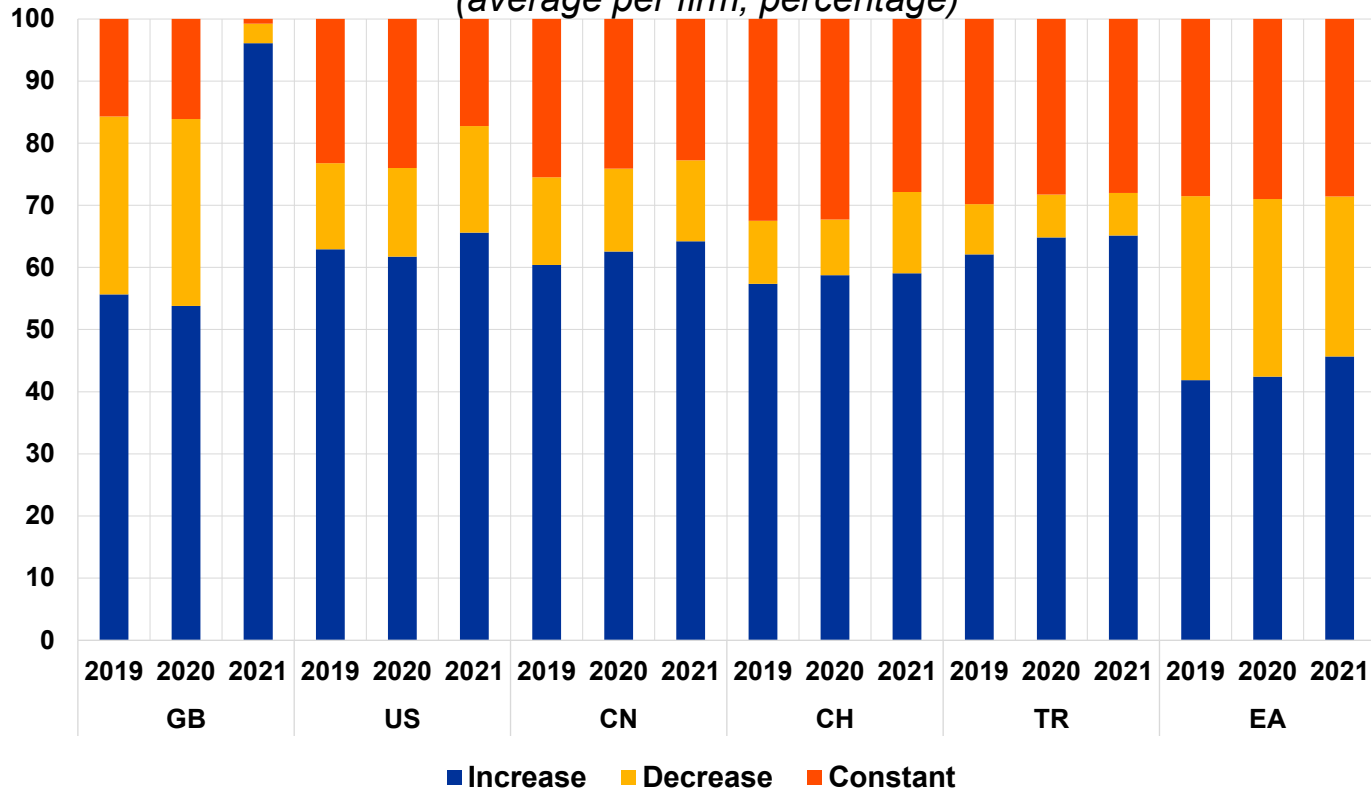
Plus two or more sourcing countries



Rebalancing

Probability of increase and decrease of the main country import share compared to previous year

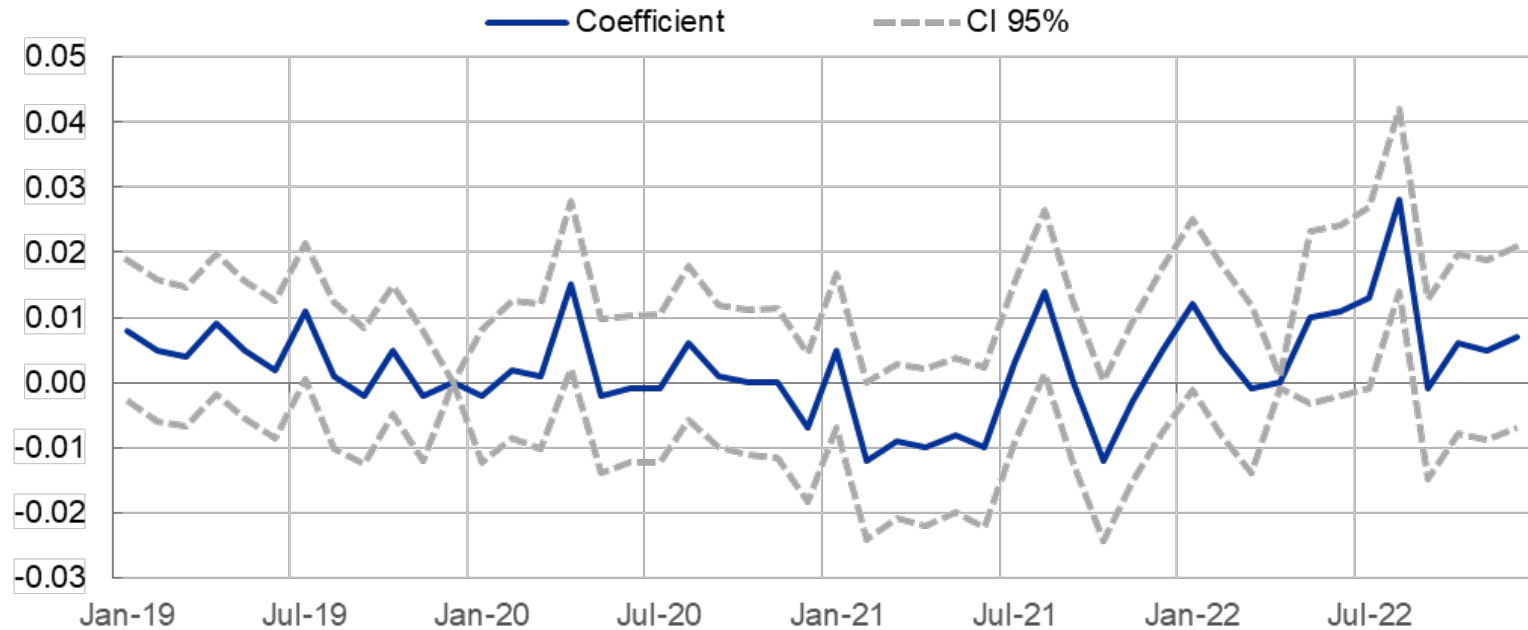
(average per firm, percentage)



$$\text{imports market shares}_{ijt} = \sum_{k=-2}^7 \beta_k \text{time dummy}_{kt} \times \text{non-EU}_{ij} + FE_{ij} + FE_t + \varepsilon_{ijt}$$

- Estimate the import market share (in volume) of firm i from its main sourcing country j at time t using fixed effects
- Augment with a dummy for those products whose main sourcing country was non-EU in 2016
- Time varying coefficients β_k measure how much the import market share of main suppliers has increased for those firms originally sourcing mainly from non-EU countries relative to other firms

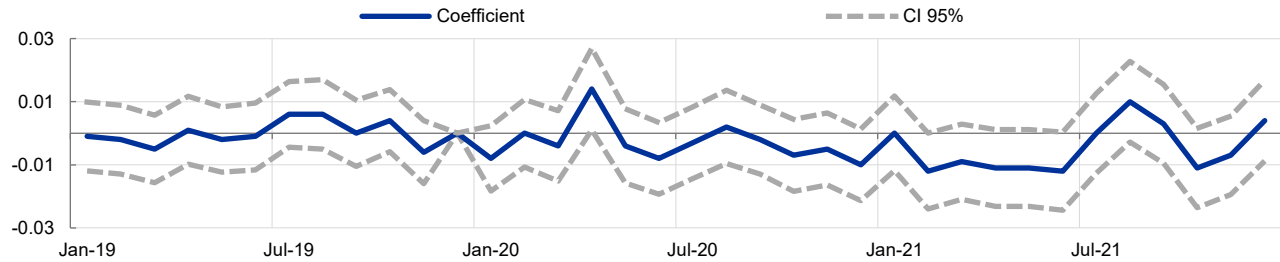
Main results for rebalancing



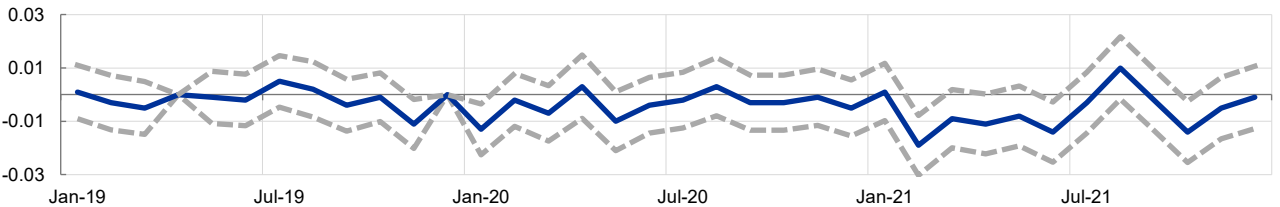
Note: Only continuous importers in the 12 months immediately before the crisis are retained. Non-EU dummy_{ip} equals 1 if the firm's main sourcing country for its main HS6 product in 2019 was outside the EU. The reference point is December 2019. The United Kingdom is dropped from the database to avoid Brexit to drive the results.

Rebalancing – robustness checks

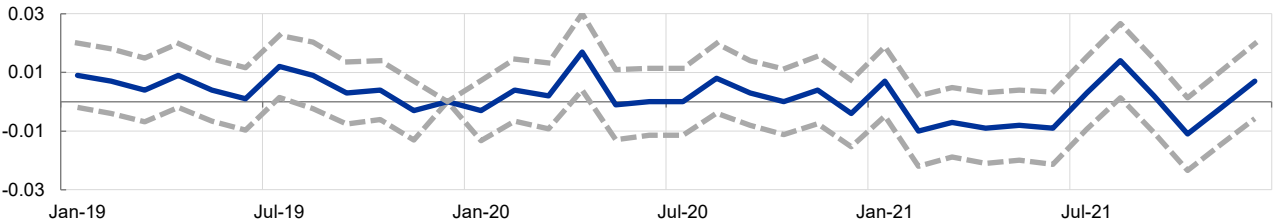
3 years



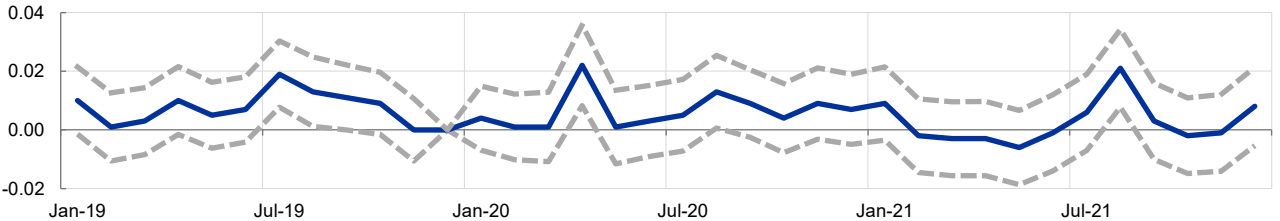
Keep GVC firms



Drop energy

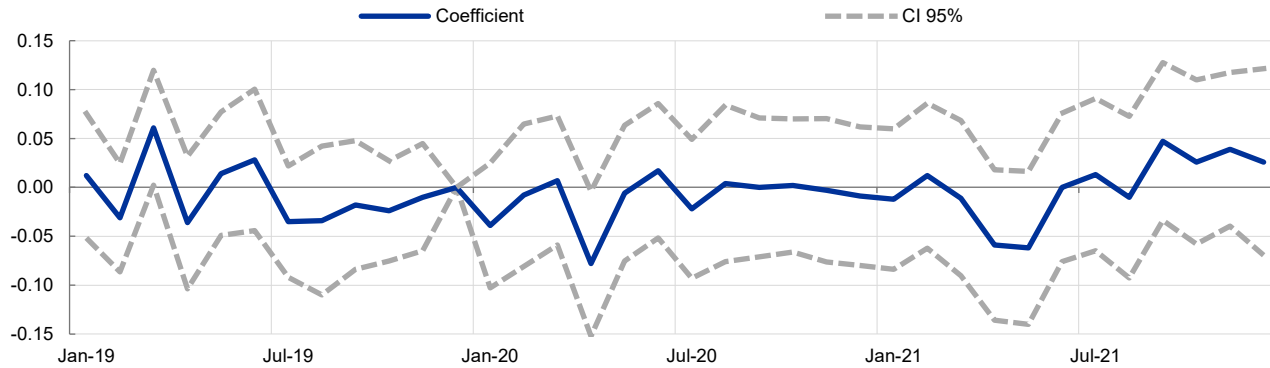


Volume

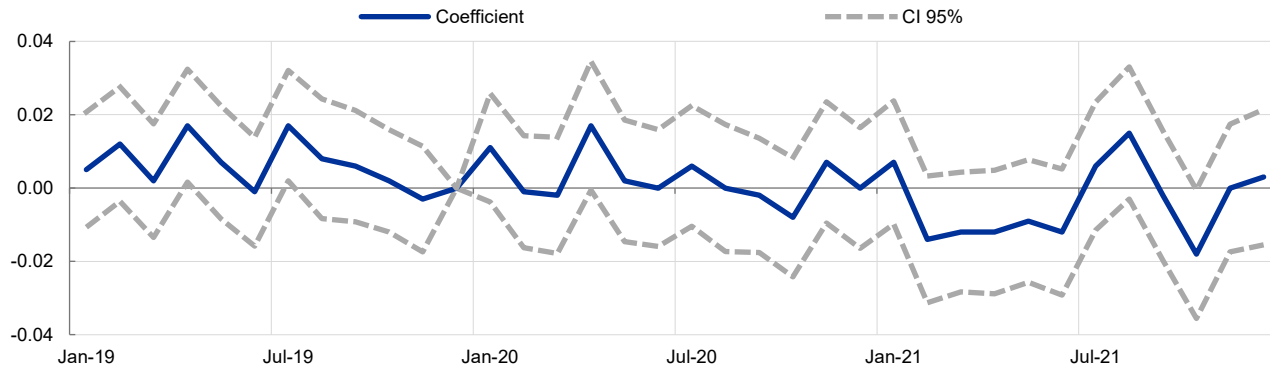


Rebalancing – robustness checks – by type of goods

Strategic goods



Intermediate goods



Results :

- Evidence of diversification
- No evidence of Rebalancing

Compromise chosen to limit the costs while increasing supply chain resilience?

Further work (going on):

- Look at the differences in adjustment strategies depending on firms' characteristics,
 - Size
 - Productivity
 - GVC involvement
- Exploring the price dimension

Thank you for the attention!

Background slides

Main results for diversification

Number sourcing countries	(1)	(2)
nonEU x y2019m1	0.0398* (0.0231)	0.0202 (0.0183)
nonEU x y2019m2	0.0275 (0.0244)	0.0140 (0.0186)
nonEU x y2019m3	0.00940 (0.0210)	-0.00357 (0.0171)
nonEU x y2019m4	0.0226 (0.0209)	0.0130 (0.0172)
nonEU x y2019m5	0.0210 (0.0211)	0.00898 (0.0171)
nonEU x y2019m6	0.0246 (0.0210)	0.00221 (0.0171)
nonEU x y2019m7	0.0441** (0.0215)	0.0359** (0.0176)
nonEU x y2019m8	0.0207 (0.0209)	0.00162 (0.0169)
nonEU x y2019m9	0.0145 (0.0200)	0.000655 (0.0161)
nonEU x y2019m10	0.0144 (0.0200)	0.00604 (0.0161)
nonEU x y2019m11	0.000773 (0.0193)	0.00132 (0.0157)
nonEU x y2020m1	0.0233 (0.0234)	0.0110 (0.0178)
nonEU x y2020m2	0.0300 (0.0224)	-0.0185 (0.0175)
nonEU x y2020m3	0.0539** (0.0218)	-0.000915 (0.0178)
nonEU x y2020m4	0.0393 (0.0265)	-0.0703*** (0.0220)
nonEU x y2020m5	-0.00612 (0.0234)	-0.101*** (0.0190)
nonEU x y2020m6	0.0133 (0.0221)	-0.0292 (0.0182)
nonEU x y2020m7	-0.000880 (0.0221)	-0.0326* (0.0179)
nonEU x y2020m8	-0.00162 (0.0226)	-0.0429** (0.0182)
nonEU x y2020m9	-0.0172 (0.0215)	-0.0505*** (0.0176)
nonEU x y2020m10	-0.00443 (0.0222)	0.0338* (0.0181)
nonEU x y2020m11	0.0220 (0.0219)	-0.0199 (0.0181)
nonEU x y2020m12	0.0146 (0.0221)	-0.00147 (0.0180)
nonEU x y2021m1	0.0683** (0.0284)	0.0134 (0.0224)
nonEU x y2021m2	0.0645** (0.0262)	0.0110 (0.0211)

nonEU x y2021m3	0.121*** (0.0276)	0.0609*** (0.0223)
nonEU x y2021m4	0.0808*** (0.0281)	0.0195 (0.0227)
nonEU x y2021m5	0.104*** (0.0279)	0.0439* (0.0224)
nonEU x y2021m6	0.100*** (0.0287)	0.0578** (0.0229)
nonEU x y2021m7	0.0862*** (0.0297)	0.0408* (0.0232)
nonEU x y2021m8	0.127*** (0.0302)	0.0630*** (0.0236)
nonEU x y2021m9	0.103*** (0.0297)	0.0407* (0.0235)
nonEU x y2021m10	0.131*** (0.0302)	0.0707*** (0.0240)
nonEU x y2021m11	0.107*** (0.0297)	0.0722*** (0.0236)
nonEU x y2021m12	0.107*** (0.0297)	0.0779*** (0.0236)
nonEU x y2022m1	0.138*** (0.0338)	0.0970*** (0.0268)
nonEU x y2022m2	0.0868*** (0.0326)	0.0335 (0.0263)
nonEU x y2022m3	0.142*** (0.0334)	0.0992*** (0.0272)
nonEU x y2022m4	0.0816** (0.0326)	0.0281 (0.0265)
nonEU x y2022m5	0.0776** (0.0327)	0.0250 (0.0262)
nonEU x y2022m6	0.110*** (0.0335)	0.0833*** (0.0268)
nonEU x y2022m7	0.0646* (0.0340)	0.0355 (0.0276)
nonEU x y2022m8	0.0897*** (0.0344)	0.0736*** (0.0277)
nonEU x y2022m9	0.103*** (0.0342)	0.0760*** (0.0271)
nonEU x y2022m10	0.0871*** (0.0337)	0.0548** (0.0265)
nonEU x y2022m11	0.0871*** (0.0331)	0.0574** (0.0265)
nonEU x y2022m12	0.0703** (0.0337)	0.0540** (0.0273)
Constant	2.428*** (0.00402)	2.417*** (0.00330)
Observations	1,065,895	1,105,753
R-squared	0.869	0.857
Firm FE	YES	YES
Time FE	NO	YES
Product-time FE	YES	NO

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Only continuous importers in the 12 months immediately

Diversification – Robustness checks

	(1)	(2)	(3)	(4)	(5)	(6)
Number sourcing countries	3 years	Keep GVC firms	Drop energy	Keep strategic goods	Keep intermediate goods	One country in 2019
nonEU x y2019m1	0.0394* (0.0211)	0.0508* (0.0277)	0.0372* (0.0206)	0.0310 (0.152)	0.0375 (0.0287)	-0.00769 (0.0147)
nonEU x y2019m2	0.0164 (0.0220)	0.0481 (0.0293)	0.0157 (0.0214)	0.247* (0.128)	0.0101 (0.0286)	-0.0212 (0.0139)
nonEU x y2019m3	0.0126 (0.0193)	0.0243 (0.0248)	0.00317 (0.0188)	0.118 (0.149)	0.0155 (0.0281)	-0.0186 (0.0154)
nonEU x y2019m4	0.0161 (0.0193)	0.0287 (0.0246)	0.0272 (0.0186)	0.258* (0.131)	0.0420 (0.0274)	-0.00500 (0.0150)
nonEU x y2019m5	0.0133 (0.0191)	0.0295 (0.0247)	0.0201 (0.0188)	0.0485 (0.139)	0.0195 (0.0272)	-0.00823 (0.0153)
nonEU x y2019m6	0.0208 (0.0192)	0.0251 (0.0245)	0.0200 (0.0185)	0.0986 (0.149)	0.0332 (0.0266)	0.0139 (0.0147)
nonEU x y2019m7	0.0457*** (0.0194)	0.0631** (0.0249)	0.0436** (0.0187)	-0.0487 (0.134)	0.0648** (0.0271)	0.0170 (0.0144)
nonEU x y2019m8	0.0410** (0.0186)	0.0551** (0.0240)	0.0290 (0.0180)	0.110 (0.136)	0.0539** (0.0262)	0.0125 (0.0129)
nonEU x y2019m9	0.00912 (0.0177)	0.0141 (0.0229)	0.00812 (0.0172)	0.172 (0.125)	0.00227 (0.0261)	0.0143 (0.0137)
nonEU x y2019m10	0.0166 (0.0176)	0.00904 (0.0228)	0.00150 (0.0172)	0.0597 (0.124)	0.00140 (0.0247)	0.00507 (0.0140)
nonEU x y2019m11	-0.00382 (0.0171)	0.00197 (0.0222)	-0.00835 (0.0167)	0.0445 (0.106)	-0.0113 (0.0252)	-0.0200 (0.0124)
nonEU x y2020m1	0.0262 (0.0204)	0.0266 (0.0279)	0.00439 (0.0199)	-0.0107 (0.120)	-0.00167 (0.0268)	-0.00129 (0.0135)
nonEU x y2020m2	0.0241 (0.0198)	0.0458* (0.0260)	0.0255 (0.0192)	0.0226 (0.125)	0.0412 (0.0269)	0.0102 (0.0138)
nonEU x y2020m3	0.0680*** (0.0195)	0.0563** (0.0250)	0.0473** (0.0190)	0.110 (0.142)	0.0658** (0.0277)	-0.00585 (0.0138)
nonEU x y2020m4	0.0557*** (0.0237)	0.0753** (0.0300)	0.0516** (0.0233)	0.239 (0.155)	0.0942*** (0.0305)	0.0249* (0.0134)
nonEU x y2020m5	0.00203 (0.0210)	0.0344 (0.0268)	0.00555 (0.0207)	0.154 (0.148)	0.0402 (0.0290)	-0.00141 (0.0136)
nonEU x y2020m6	0.0178 (0.0200)	0.00839 (0.0256)	0.0104 (0.0194)	0.105 (0.136)	-0.0161 (0.0279)	0.000653 (0.0141)
nonEU x y2020m7	0.00415 (0.0198)	0.0181 (0.0254)	-0.000155 (0.0194)	0.0386 (0.129)	-0.0143 (0.0284)	-0.0189 (0.0140)
nonEU x y2020m8	0.0381* (0.0205)	0.0116 (0.0263)	0.00543 (0.0200)	0.0733 (0.151)	0.0577** (0.0291)	-0.00318 (0.0138)
nonEU x y2020m9	-0.00421 (0.0194)	0.00140 (0.0246)	-0.00177 (0.0189)	0.0515 (0.128)	-0.00127 (0.0282)	-0.00936 (0.0149)

nonEU x y2020m10	0.000797 (0.0204)	0.0118 (0.0257)	0.00505 (0.0196)	0.0201 (0.126)	0.0101 (0.0286)	0.00214 (0.0148)
nonEU x y2020m11	0.0241 (0.0200)	-0.00816 (0.0250)	0.0136 (0.0193)	0.211 (0.142)	-0.0291 (0.0284)	0.0146 (0.0143)
nonEU x y2020m12	0.00927 (0.0201)	0.00186 (0.0255)	0.0181 (0.0195)	0.315** (0.130)	0.0154 (0.0291)	-0.00908 (0.0138)
nonEU x y2021m1	0.0662*** (0.0252)	0.0663** (0.0326)	0.0588** (0.0248)	0.228* (0.130)	0.0828** (0.0352)	0.0581*** (0.0178)
nonEU x y2021m2	0.0708*** (0.0236)	0.0678** (0.0301)	0.0623*** (0.0231)	0.260* (0.138)	0.0613* (0.0340)	0.0340** (0.0174)
nonEU x y2021m3	0.114*** (0.0248)	0.119*** (0.0308)	0.104*** (0.0239)	0.295* (0.162)	0.132*** (0.0360)	0.0794*** (0.0201)
nonEU x y2021m4	0.0625** (0.0251)	0.0737** (0.0317)	0.0731*** (0.0244)	0.186 (0.170)	0.105*** (0.0375)	0.0833*** (0.0235)
nonEU x y2021m5	0.118*** (0.0250)	0.113*** (0.0312)	0.0874*** (0.0242)	0.284* (0.149)	0.114*** (0.0375)	0.0860*** (0.0242)
nonEU x y2021m6	0.0920*** (0.0257)	0.102*** (0.0323)	0.0878*** (0.0251)	0.304* (0.184)	0.118*** (0.0398)	0.0871*** (0.0247)
nonEU x y2021m7	0.0845*** (0.0263)	0.0938*** (0.0330)	0.0708*** (0.0258)	0.335** (0.158)	0.0894** (0.0394)	0.0646*** (0.0243)
nonEU x y2021m8	0.123*** (0.0268)	0.114*** (0.0336)	0.107*** (0.0263)	0.145 (0.156)	0.170*** (0.0399)	0.0911*** (0.0240)
nonEU x y2021m9	0.0882*** (0.0264)	0.0702** (0.0330)	0.0645** (0.0257)	0.166 (0.169)	0.0996** (0.0398)	0.0749*** (0.0249)
nonEU x y2021m10	0.120*** (0.0267)	0.122*** (0.0338)	0.0902*** (0.0262)	0.139 (0.167)	0.121*** (0.0412)	0.0783*** (0.0250)
nonEU x y2021m11	0.0879*** (0.0262)	0.0981*** (0.0333)	0.0832*** (0.0259)	-0.0366 (0.172)	0.0880** (0.0405)	0.0607** (0.0242)
nonEU x y2021m12	0.0921*** (0.0259)	0.0759** (0.0325)	0.0670*** (0.0253)	0.215 (0.178)	0.133*** (0.0396)	0.0502** (0.0227)
Constant	2.331*** (0.00349)	2.638*** (0.00534)	2.307*** (0.00345)	2.106*** (0.0462)	2.444*** (0.00459)	1.222*** (0.00260)
Observations	916,645	592,694	935,429	11,994	472,032	453,405
R-squared	0.875	0.882	0.875	0.819	0.892	0.543
Firm FE	YES	YES	YES	YES	YES	YES
Product-time FE	YES	YES	YES	YES	YES	YES

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Only continuous importers in the 12 months immediately before the crisis are retained. *Non-EU dummy_{it}* equals 1 if the firm's main sourcing country for its main HS6 product in 2019 was outside the EU. The reference point is December 2019.

Diversification – Linear probability model

Dummy increasing number sourcing countries	(1) General	(2) Plus one	(3) Plus more		(0.00682)	(0.00850)	(0.00932)
nonEU x y2019m1	0.00137 (0.00686)	-0.00525 (0.00845)	-0.00618 (0.00936)	nonEU x y2020m12	0.00235 (0.00670)	0.00335 (0.00862)	0.00157 (0.00930)
nonEU x y2019m2	-0.000993 (0.00682)	-0.00840 (0.00843)	-0.0124 (0.00926)	nonEU x y2021m1	0.0208*** (0.00676)	0.0191** (0.00898)	0.0311*** (0.00984)
nonEU x y2019m3	-0.00547 (0.00696)	-0.00740 (0.00856)	-0.0105 (0.00952)	nonEU x y2021m2	0.0202*** (0.00699)	0.00554 (0.00923)	0.0153 (0.0101)
nonEU x y2019m4	0.00359 (0.00684)	0.00114 (0.00838)	-0.000250 (0.00934)	nonEU x y2021m3	0.0345*** (0.00722)	0.0297*** (0.00949)	0.0407*** (0.0104)
nonEU x y2019m5	-0.00257 (0.00686)	-0.0169** (0.00834)	-0.0153 (0.00939)	nonEU x y2021m4	0.0266*** (0.00711)	0.0120 (0.00945)	0.0300*** (0.0104)
nonEU x y2019m6	0.00501 (0.00674)	0.00902 (0.00849)	0.0112 (0.00928)	nonEU x y2021m5	0.0289*** (0.00713)	0.0169* (0.00952)	0.0359*** (0.0105)
nonEU x y2019m7	0.0153** (0.00677)	0.00972 (0.00829)	0.0144 (0.00921)	nonEU x y2021m6	0.0248*** (0.00721)	0.00719 (0.00941)	0.0257** (0.0105)
nonEU x y2019m8	0.00598 (0.00621)	0.00655 (0.00778)	0.00979 (0.00863)	nonEU x y2021m7	0.0198*** (0.00714)	0.00349 (0.00934)	0.0203* (0.0105)
nonEU x y2019m9	0.00401 (0.00661)	0.00729 (0.00815)	0.00993 (0.00905)	nonEU x y2021m8	0.0198*** (0.00714)	0.00349 (0.00934)	0.0203* (0.0105)
nonEU x y2019m10	-0.00799 (0.00671)	0.00313 (0.00804)	0.00150 (0.00905)	nonEU x y2021m9	0.0302*** (0.00686)	0.0252*** (0.00937)	0.0414*** (0.0103)
nonEU x y2019m11	-0.00639 (0.00646)	-0.00633 (0.00773)	-0.0114 (0.00856)	nonEU x y2021m10	0.0194*** (0.00726)	0.0304*** (0.0100)	0.0351*** (0.0108)
nonEU x y2020m1	-0.00227 (0.00659)	0.00150 (0.00825)	0.000370 (0.00898)	nonEU x y2021m11	0.0232*** (0.00719)	0.0152 (0.00959)	0.0288*** (0.0106)
nonEU x y2020m2	0.0103 (0.00669)	0.00822 (0.00821)	0.0119 (0.00910)	nonEU x y2021m12	0.0196*** (0.00717)	0.0208** (0.00948)	0.0253** (0.0106)
nonEU x y2020m3	0.0168*** (0.00641)	0.00723 (0.00803)	0.00479 (0.00884)	nonEU x y2021m12	0.00856 (0.00617)	0.00360 (0.00955)	0.0171 (0.0106)
nonEU x y2020m4	0.00915 (0.00617)	0.0132 (0.00882)	0.0201** (0.00937)	Constant	0.199*** (0.000996)	0.129*** (0.00106)	0.168*** (0.00147)
nonEU x y2020m5	-0.00434 (0.00619)	-0.0142* (0.00816)	-0.00952 (0.00887)	Observations	939,285	453,405	453,405
nonEU x y2020m6	0.00304 (0.00659)	0.00199 (0.00821)	0.000984 (0.00906)	R-squared	0.445	0.389	0.513
nonEU x y2020m7	-0.00269 (0.00661)	-0.00677 (0.00830)	-0.0115 (0.00912)	Firm FE	YES	YES	YES
nonEU x y2020m8	0.00263 (0.00634)	-0.000656 (0.00825)	-0.000340 (0.00901)	Product-time FE	YES	YES	YES
nonEU x y2020m9	0.00316 (0.00686)	0.00927 (0.00875)	0.00449 (0.00948)				
nonEU x y2020m10	-0.00239 (0.00687)	-0.000887 (0.00864)	0.000913 (0.00948)				
nonEU x y2020m11	0.00908 (0.00687)	0.00994 (0.00864)	0.0160* (0.00948)				

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Only continuous importers in the 12 months immediately before the crisis are retained. *Non-EU dummy_{ip}* equals 1 if the firm's main sourcing country for its main HS6 product in 2019 was outside the EU. The reference point is December 2019.

Main results for rebalancing

Imports share	(1)	(2)			
nonEU x y2019m1	0.00848 (0.00553)	0.00327 (0.00442)	nonEU x y2021m4	-0.0108* (0.00616)	-0.0161*** (0.00505)
nonEU x y2019m2	0.00513 (0.00557)	0.00118 (0.00454)	nonEU x y2021m5	-0.00885 (0.00605)	-0.0156*** (0.00501)
nonEU x y2019m3	0.00456 (0.00548)	0.00117 (0.00439)	nonEU x y2021m6	-0.0104* (0.00627)	-0.0158*** (0.00509)
nonEU x y2019m4	0.00910* (0.00549)	0.00414 (0.00437)	nonEU x y2021m7	0.00337 (0.00630)	-0.00718 (0.00518)
nonEU x y2019m5	0.00562 (0.00539)	0.00215 (0.00435)	nonEU x y2021m8	0.0140** (0.00643)	0.00613 (0.00526)
nonEU x y2019m6	0.00279 (0.00534)	0.00013 (0.00432)	nonEU x y2021m9	-0.000250 (0.00633)	-0.00846 (0.00518)
nonEU x y2019m7	0.0113** (0.00534)	0.00670 (0.00425)	nonEU x y2021m10	-0.0124** (0.00627)	-0.0183*** (0.00512)
nonEU x y2019m8	0.00105* (0.00573)	0.00670 (0.00455)	nonEU x y2021m11	-0.00348 (0.00631)	-0.00802 (0.00512)
nonEU x y2019m9	-0.00287 (0.00535)	-0.000157 (0.00430)	nonEU x y2021m12	0.00543 (0.00644)	-0.00679 (0.00525)
nonEU x y2019m10	0.00523 (0.00507)	0.00292 (0.00407)	nonEU x y2022m1	0.0127* (0.00667)	0.000405 (0.00546)
nonEU x y2019m11	-0.00238 (0.00507)	-0.00530 (0.00407)	nonEU x y2022m2	0.00576 (0.00666)	-0.00326 (0.00553)
nonEU x y2020m1	-0.00269 (0.00520)	-0.00887** (0.00422)	nonEU x y2022m3	-0.00157 (0.00653)	-0.00553 (0.00541)
nonEU x y2020m2	0.00223 (0.00533)	-0.00453 (0.00443)	nonEU x y2022m4	0.000440 (0.000440)	-0.00482 (0.00563)
nonEU x y2020m3	0.00119 (0.00569)	-0.00395 (0.00462)	nonEU x y2022m5	0.0104 (0.00672)	0.00488 (0.00551)
nonEU x y2020m4	0.0150** (0.00661)	0.00155 (0.00535)	nonEU x y2022m6	0.0110 (0.00672)	-0.000631 (0.00563)
nonEU x y2020m5	-0.00202 (0.00606)	-0.0105** (0.00490)	nonEU x y2022m7	0.0139** (0.00708)	0.00417 (0.00573)
nonEU x y2020m6	-0.00139 (0.00578)	-0.00670 (0.00469)	nonEU x y2022m8	0.0285*** (0.00716)	0.0189*** (0.00587)
nonEU x y2020m7	-0.00120 (0.00581)	-0.00470 (0.00470)	nonEU x y2022m9	-0.00129 (0.00701)	-0.00340 (0.00569)
nonEU x y2020m8	0.00684 (0.00604)	0.000428 (0.00489)	nonEU x y2022m10	0.00653 (0.00704)	-0.00149 (0.00572)
nonEU x y2020m9	0.00157 (0.00560)	-0.00655 (0.00463)	nonEU x y2022m11	0.00588 (0.00701)	-0.00302 (0.00566)
nonEU x y2020m10	-0.000872 (0.00570)	-0.00655 (0.00465)	nonEU x y2022m12	0.00710 (0.00716)	0.000274 (0.00577)
nonEU x y2020m11	0.000456 (0.00587)	-0.00695 (0.00475)	Constant	0.762*** (0.000854)	0.764*** (0.000696)
nonEU x y2020m12	-0.00762 (0.00578)	-0.0113** (0.00470)	Observations	1,021,329	1,061,017
nonEU x y2021m1	0.00562 (0.00604)	-0.00107 (0.00485)	R-squared	0.663	0.627
nonEU x y2021m2	-0.0123*** (0.00612)	-0.0209*** (0.00504)	Firm FE	YES	YES
nonEU x y2021m3	-0.00978 (0.00602)	-0.0139*** (0.00491)	Product-time FE	YES	NO
			Time FE	NO	YES

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Only continuous importers in the 12 months immediately before the crisis are retained. *Non-EU dummy_{it}* equals 1 if the firm's main sourcing country for its main HS6 product in 2019 was outside the EU. The reference point is December 2019. The United Kingdom is dropped from the database to avoid Brexit to drive the results.

Rebalancing – Robustness checks

	(1)	(2)	(3)	(4)	(5)	(6)		(0.00559)	(0.00526)	(0.00562)	(0.0362)	(0.00796)	(0.00588)
Imports share	3 years	Keep GVC firms	Drop energy	Keep strategic goods	Keep intermediate goods	Volume	nonEU x y2020m10	-0.00751	-0.00391	0.000997	0.00294	-0.00835	0.00441
								(0.00580)	(0.00528)	(0.00570)	(0.0347)	(0.00828)	(0.00603)
nonEU x y2019m1	-0.00108 (0.00557)	0.00176 (0.00511)	0.00982* (0.00559)	0.0124 (0.0325)	0.00512 (0.00802)	0.0105* (0.00586)	nonEU x y2020m11	-0.00528 (0.00583)	-0.00119 (0.00539)	0.00432 (0.00586)	-0.00367 (0.0374)	0.00794 (0.00844)	0.00996 (0.00620)
nonEU x y2019m2	-0.00242 (0.00557)	-0.00324 (0.00519)	0.00705 (0.00562)	-0.0315 (0.0283)	0.0129 (0.00799)	0.00108 (0.00591)	nonEU x y2021m1	-0.0109* (0.00579)	-0.00517 (0.00536)	-0.00476 (0.00577)	-0.00912 (0.0361)	0.000573 (0.00841)	0.00722 (0.00611)
nonEU x y2019m3	-0.00525 (0.00545)	-0.00544 (0.00504)	0.00409 (0.00554)	0.0617** (0.0299)	0.00277 (0.00789)	0.00340 (0.00582)	nonEU x y2021m2	0.000194 (0.00603)	0.00109 (0.00549)	0.00744 (0.00605)	-0.0125 (0.0366)	0.00772 (0.00856)	0.00942 (0.00637)
nonEU x y2019m4	0.00180 (0.00548)	-1.64e-05 (0.00501)	0.00946* (0.00555)	-0.0360 (0.0346)	0.0175** (0.00785)	0.0105* (0.00591)	nonEU x y2021m3	-0.0121** (0.00613)	-0.0198*** (0.00574)	-0.0109* (0.00613)	0.0127 (0.0378)	-0.0145 (0.00883)	-0.00249 (0.00642)
nonEU x y2019m5	-0.00207 (0.00527)	-0.00141 (0.00499)	0.00495 (0.00543)	0.0145 (0.0322)	0.00754 (0.00785)	0.00581 (0.00575)	nonEU x y2021m4	-0.00969 (0.00608)	-0.00914 (0.00558)	-0.00765 (0.00605)	-0.0116 (0.0405)	-0.0126 (0.00833)	-0.00358 (0.00642)
nonEU x y2019m6	-0.00132 (0.00540)	-0.00237 (0.00495)	0.00152 (0.00542)	0.0286 (0.0369)	-0.00117 (0.00759)	0.00710 (0.00568)	nonEU x y2021m5	-0.0113* (0.00619)	-0.0110* (0.00570)	-0.00942 (0.00615)	-0.0594 (0.0392)	-0.0126 (0.00859)	-0.00391 (0.00646)
nonEU x y2019m7	0.00698 (0.00530)	0.00542 (0.00492)	0.0120** (0.00540)	-0.0354 (0.0290)	0.0177** (0.00768)	0.0192*** (0.00576)	nonEU x y2021m6	-0.0112* (0.00621)	-0.00846 (0.00570)	-0.00827 (0.00609)	-0.0627 (0.0399)	-0.00936 (0.00852)	-0.00614 (0.00645)
nonEU x y2019m8	0.00677 (0.00561)	0.00220 (0.00528)	0.00945 (0.00581)	-0.0342 (0.0388)	0.00899 (0.00833)	0.0132** (0.00603)	nonEU x y2021m7	-0.0120* (0.00631)	-0.0147*** (0.00575)	-0.00920 (0.00628)	-0.000165 (0.0388)	-0.0127 (0.00876)	-0.00148 (0.00664)
nonEU x y2019m9	0.000244 (0.00536)	-0.00435 (0.00495)	0.00338 (0.00541)	-0.0187 (0.0336)	0.00688 (0.00775)	0.0116** (0.00565)	nonEU x y2021m8	-0.000208 (0.00645)	-0.00366 (0.00584)	0.00351 (0.00630)	0.0130 (0.0397)	0.00658 (0.00890)	0.00620 (0.00662)
nonEU x y2019m10	0.00408 (0.00501)	-0.00138 (0.00465)	0.00440 (0.00512)	-0.0241 (0.0261)	0.00291 (0.00712)	0.00972* (0.00541)	nonEU x y2021m9	0.0109* (0.00653)	0.0106* (0.00599)	0.0147** (0.00645)	-0.0106 (0.0422)	0.0155* (0.00920)	0.0213*** (0.00677)
nonEU x y2019m11	-0.00650 (0.00510)	-0.0112** (0.00468)	-0.00301 (0.00511)	-0.0101 (0.0279)	-0.00329 (0.00735)	-0.000626 (0.00542)	nonEU x y2021m10	0.00375 (0.00638)	-0.00222 (0.00585)	0.00208 (0.00638)	0.0477 (0.0412)	-0.00295 (0.00903)	0.00395 (0.00664)
nonEU x y2020m1	-0.00890* (0.00527)	-0.0131*** (0.00486)	-0.00330 (0.00524)	-0.0399 (0.0325)	0.0112 (0.00753)	0.00460 (0.00558)	nonEU x y2021m11	-0.0111* (0.00640)	-0.0141** (0.00586)	-0.0114* (0.00631)	0.0267 (0.0429)	-0.0181** (0.00894)	-0.00255 (0.00657)
nonEU x y2020m2	-0.000236 (0.00546)	-0.00275 (0.00505)	0.00407 (0.00539)	-0.00820 (0.0371)	-0.00192 (0.00781)	0.00156 (0.00571)	nonEU x y2021m12	-0.00758 (0.00634)	-0.00504 (0.00588)	-0.00248 (0.00636)	0.0393 (0.0401)	0.000750 (0.00887)	-0.00187 (0.00667)
nonEU x y2020m3	-0.00491 (0.00570)	-0.00749 (0.00530)	0.00227 (0.00575)	0.00720 (0.0337)	-0.00237 (0.00809)	0.00131 (0.00602)	nonEU x y2021m12	0.00462 (0.00651)	-0.00135 (0.00598)	0.00773 (0.00651)	0.0269 (0.0487)	0.00336 (0.00942)	0.00862 (0.00682)
nonEU x y2020m4	0.0141** (0.00660)	0.00319 (0.00607)	0.0175*** (0.00663)	-0.0783** (0.0378)	0.0173* (0.00895)	0.0222*** (0.00699)	Constant	0.760*** (0.000825)	0.746*** (0.000942)	0.771*** (0.000830)	0.791*** (0.0103)	0.758*** (0.00108)	0.768*** (0.000871)
nonEU x y2020m5	-0.00448 (0.00600)	-0.0108* (0.00563)	-0.00190 (0.00610)	-0.00662 (0.0354)	0.00207 (0.00846)	0.00121 (0.00640)	Observations	786,680	572,605	792,940	10,087	410,342	787,630
nonEU x y2020m6	-0.00838 (0.00580)	-0.00449 (0.00534)	0.000658 (0.00581)	0.0175 (0.0351)	-0.000268 (0.00811)	0.00333 (0.00617)	R-squared	0.687	0.622	0.661	0.635	0.667	0.653
nonEU x y2020m7	-0.00383 (0.00579)	-0.00297 (0.00533)	0.000966 (0.00583)	-0.0222 (0.0362)	0.00676 (0.00840)	0.00550 (0.00622)	Firm FE	YES	YES	YES	YES	YES	YES
nonEU x y2020m8	0.00218 (0.00591)	0.00306 (0.00559)	0.00836 (0.00605)	0.00420 (0.0408)	0.000253 (0.00682)	0.0137** (0.00633)	Product-time FE	YES	YES	YES	YES	YES	YES
nonEU x y2020m9	-0.00277	-0.00313	0.00300	0.000363	-0.00250	0.00959	Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Only continuous importers in the 12 months immediately before the crisis are retained. <i>Non-EU dummy_{it}</i> equals 1 if the firm's main sourcing country for its main HS6 product in 2019 was outside the EU. The reference point is December 2019. The United Kingdom is dropped from the database to avoid Brexit to drive the results.						