



EUROPEAN CENTRAL BANK

EUROSYSTEM

GVC exporters' performance during the COVID-19 pandemic: the role of supply bottlenecks



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Laura Lebastard, Marco Matani and Roberta Serafini
DG-E/EES

Motivation and findings

- COVID-19 crisis results in a combination of demand & supply shocks, domestically & internationally. Supply value chain trade as a source of vulnerability vs source of resilience
- *Our question: how different dimensions of GVC involvement affected exporters' performance during the pandemic?*
- Main findings:
 - ✓ GVC participation increased firms' vulnerability during the pandemic, the negative impact of supply disruptions being higher for firms located relatively more downstream
 - ✓ Firms benefited from diversification for core inputs

The reference literature

- Role of globalisation via final and intermediate goods trade in the propagation of the economic impact of the pandemic (Kohlscheen, Mojon, and Rees, 2020; Sforza and Steininger, 2020; Bonadio et al. 2021, Eppinger et al., 2020)
- Heterogeneity of firms' exposure to the pandemic, depending on the extent and nature of their involvement in international trade:
 - Di Giovanni, Levchenko and Mejean (2020), Bricogne et al. (2021): predominance of a few number of large incumbent exporters in driving the trade collapse in April/May 2020. The higher vulnerability of such firms to external shocks has significant macroeconomic implications as they account for a large share of aggregate economic activity
 - Lafrogne-Joussier, Martin and Mejean (2022): early lockdown in China as a natural experiment. Over the first half of 2020, firms sourcing inputs from China experienced a drop in exports compared to GVC firms importing inputs from countries other than China. Having a geographically diversified sourcing of inputs does not mitigate the fall in exports.

What we do

- Monthly firm-product-country level data for France, from Customs until end-2021. Three phases of the pandemic:
 - ✓ February – April 2020
 - ✓ May – August 2020
 - ✓ September 2020 – December 2021
- Impact of COVID-19 pandemic on:
 - ✓ firms' exports
 - ✓ probability of survival in the export market
- Combine Customs data with Business Registry data to assess the performance of GVC exporters depending on:
 - ✓ their level of inventory
 - ✓ their productivity
- Interact GVC participation with a firm-level indicator of upstreamness (computed following Antràs et al., 2012; Chor, Manova and Yu, 2021)
- Investigate the role of diversification as in Lafrogne-Joussier et al. (2022), finer definition of “core” products
- Impact of GVC participation depending on firms' reliance on “strategic” inputs

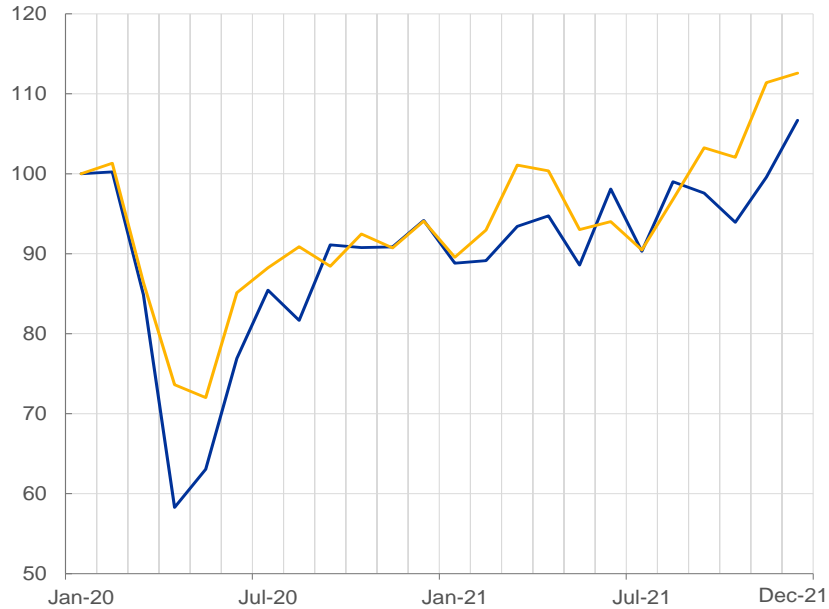
Methodology and identification strategy

- **Methodology:** difference-in-differences, logit model, and event study
- **Our sample:** continuous exporters between July and December 2019
- **Treatment period:** Feb. 2020 – Dec. 2021
- **Treated group:** GVC firms - exporting firms that have imported intermediate inputs at least once over the six months before the pandemic

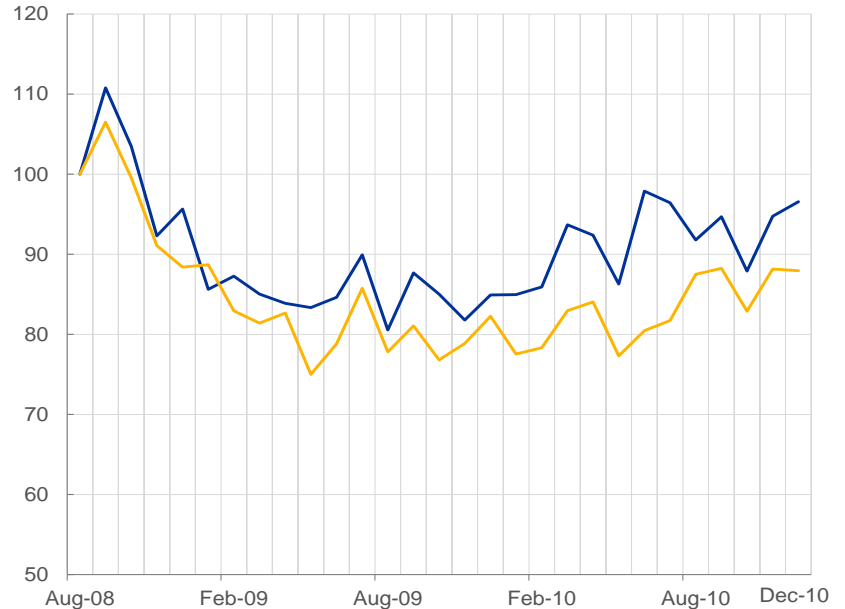
		Firm median export value in €	Number of firms (% of total)	Nominal Exports (% of total)
Continuous	All	1,505,912	25,801 (25%)	474,252,965,888 (97%)
	GVC	1,858,366	20,516 (20%)	456,644,001,792 (93%)
	non-GVC	771,670	5,285 (5%)	17,608,964,605 (4%)
Occasional	All	11,998	76,182 (75%)	14,756,839,424 (3%)
	GVC	18,000	29,688 (29%)	9,706,505,216 (2%)
	non-GVC	9,627	46,494 (46%)	5,050,334,208 (1%)

Exports by GVC status

COVID-19 pandemic (January 2020=100)



Global financial crisis (August 2008=100)



— Continuous GVC — Continuous non-GVC

Difference-in-differences, effect of GVC participation

$$\ln Export_{it} = \alpha + \beta GVC_i * COVID19_t + FE_i + FE_t + \varepsilon_{it}$$

$\ln Export_{it}$	(1) Main	(2) By phase	(3) With treatment group and treatment period
$GVC_i * COVID19_t$	-0.0768*** (0.00967)		
$GVC_i * COVID19phase1_t$		-0.0382*** (0.0119)	-0.0412* (0.0221)
$GVC_i * COVID19phase2_t$		-0.0392*** (0.0117)	-0.0458** (0.0194)
$GVC_i * COVID19phase3_t$		-0.0944*** (0.0112)	-0.0932*** (0.0116)
GVC_i			1.069*** (0.00710)
$COVID19phase1_t$			-0.137*** (0.0199)
$COVID19phase2_t$			-0.146*** (0.0174)
$COVID19phase3_t$			0.0821*** (0.0104)
Constant	11.67*** (0.00364)	11.67*** (0.00365)	10.80*** (0.00636)
Observations	1,156,272	1,156,272	1,156,272
R-squared	0.823	0.823	0.034
Firm FE	YES	YES	NO
Time FE	YES	YES	NO

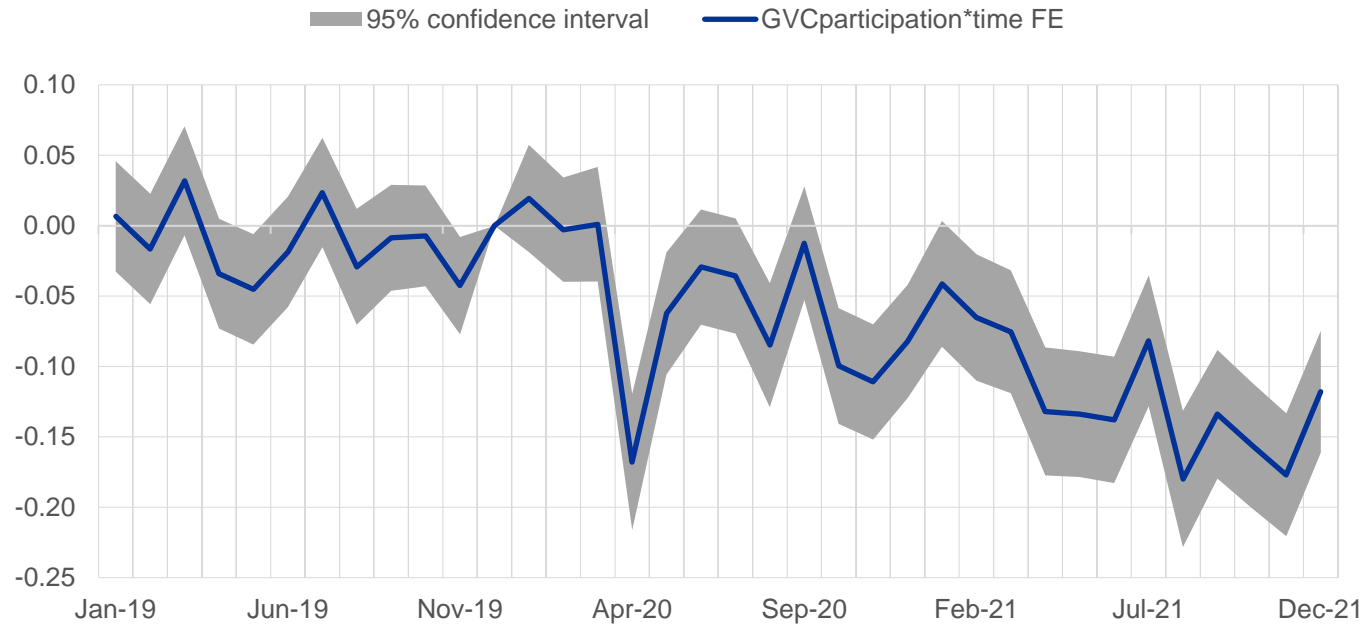
Robustness checks

By firm-characteristics

By sector

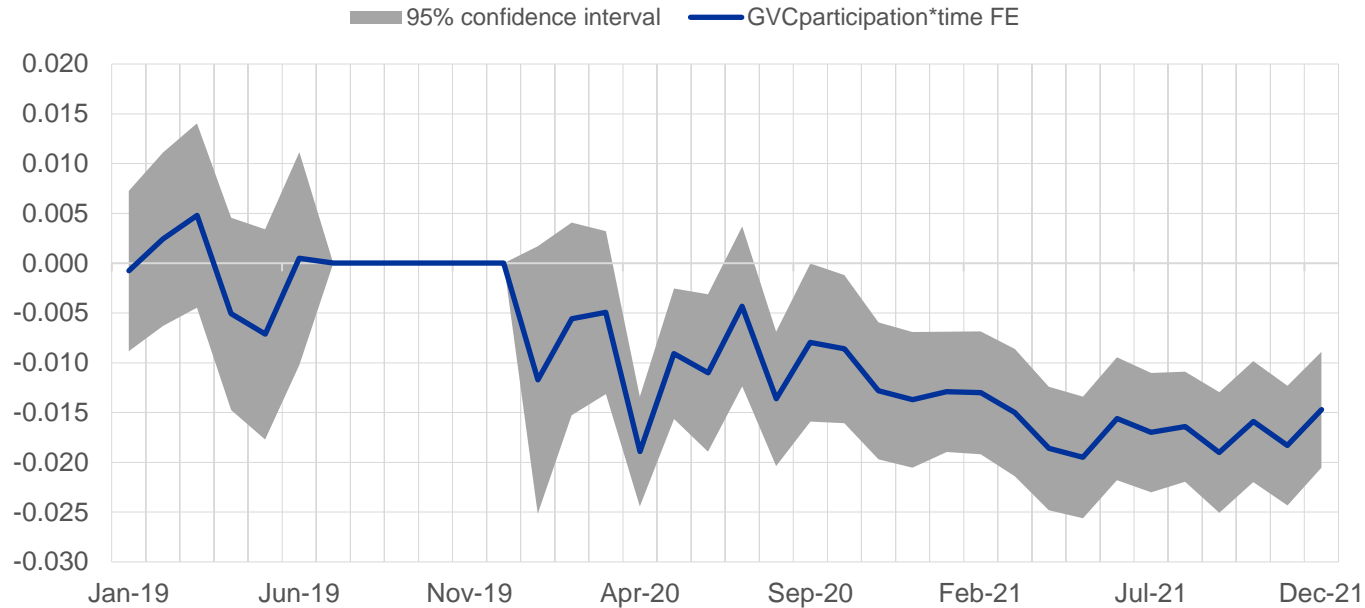
Event study, effect of GVC participation

$$\ln Export_{it} = \alpha + \sum_{j=-12}^{24} \beta_j COVID19_{jt} * GVC_i + FE_i + FE_t + \varepsilon_{it}$$



Probability of survival in the export market, effect of GVC participation

$$\mathbb{1}_{it} = \alpha + \sum_{j=-12}^{24} \beta_j COVID19_{jt} * GVC_i + FE_i + FE_t + \varepsilon_{it}$$



Effect of being downstream or upstream

$$\ln Export_{it} = \alpha + \beta_1 GVC_i * GVC \text{ position above median}_i * COVID19_t + \beta_2 GVC_i * (1 - GVC \text{ position above median}_i) * COVID19_t + FE_i + FE_t + \varepsilon_{it}$$

ln Export _{it}	(1) General	(2) By phase
GVC _i *Downstream(below median) _i *COVID19 _t	-0.0997*** (0.0120)	
GVC _i *Upstream(above median) _i *COVID19 _t	-0.0607*** (0.0114)	
GVC _i *Downstream(below median) _i *COVID19phase1 _t		-0.0747*** (0.0144)
GVC _i *Downstream(below median) _i *COVID19phase2 _t		-0.0513*** (0.0144)
GVC _i *Downstream(below median) _i *COVID19phase3 _t		-0.117*** (0.0139)
GVC _i *Upstream(above median) _i *COVID19phase1 _t		0.000570 (0.0140)
GVC _i *Upstream(above median) _i *COVID19phase2 _t		-0.0547*** (0.0138)
GVC _i *Upstream(above median) _i *COVID19phase3 _t		-0.0744*** (0.0131)
Constant	11.60*** (0.00405)	11.60*** (0.00406)
Observations	1,083,094	1,083,094
R-squared	0.819	0.819
Firm FE	YES	YES
Time FE	YES	YES

Effect of diversification of sourcing countries for core products

$$\ln Export_{it} = \alpha + \beta_1 GVC_i * COVID19_t + \beta_2 GVC_i * DiversificationCoreProduct_i * COVID19_t + FE_i + FE_t + \varepsilon_{it}$$

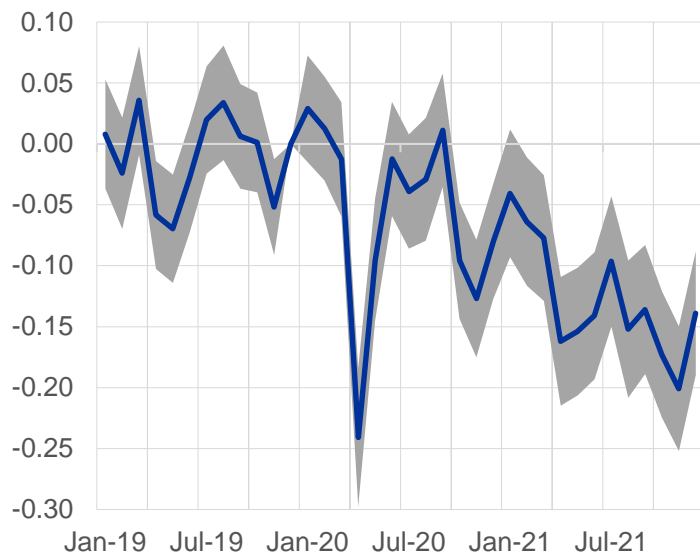
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\ln Export_{it}$	1%	5%	10%	15%	20%	25%	30%
$GVC_i * DiversificationCoreProduct_i * COVID19_t$	-0.0194 (0.0164)	0.0100 (0.0107)	0.0102 (0.00988)	0.0191* (0.00979)	0.0165* (0.00991)	0.0239** (0.0102)	0.0213** (0.0104)
$GVC_i * COVID19_t$	-0.0747*** (0.00980)	-0.0798*** (0.0102)	-0.0812*** (0.0106)	-0.0866*** (0.0109)	-0.0863*** (0.0113)	-0.0916*** (0.0116)	-0.0909*** (0.0120)
Constant	11.67*** (0.00364)	11.67*** (0.00364)	11.67*** (0.00364)	11.67*** (0.00364)	11.67*** (0.00364)	11.67*** (0.00364)	11.67*** (0.00364)
Observations	1,156,272	1,156,272	1,156,272	1,156,272	1,156,272	1,156,272	1,156,272
R-squared	0.823	0.823	0.823	0.823	0.823	0.823	0.823
Firm FE	YES	YES	YES	YES	YES	YES	YES
Time FE	YES	YES	YES	YES	YES	YES	YES

[Diff-in-diff by phase](#)

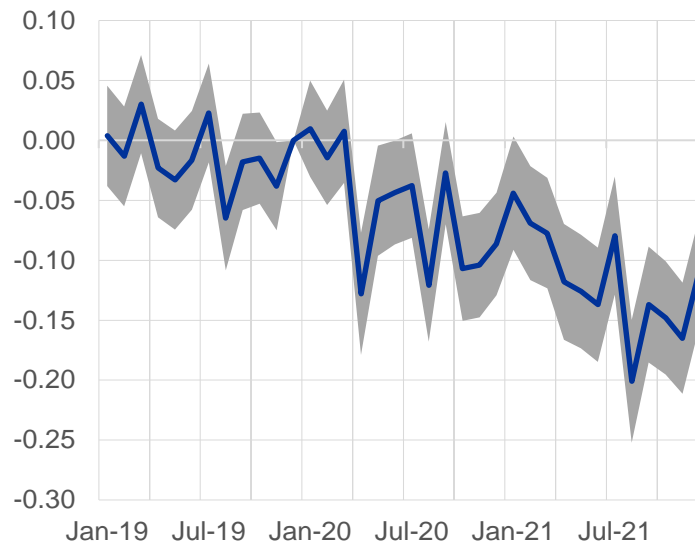
[Logit - survival prob.](#)

Effect of importing strategic products

Strategic



Non strategic



■ 95% confidence interval

— GVCparticipation*UPSTR/DWSTR*time FE

Diff-in-diff

Products are assessed as strategic based on 3 indicators: concentration, measured by the Herfindahl-Hirschman Index and the market share of the extra-EU supplying countries; demand importance, calculated as the share of extra-EU imports in total EU imports; substitutability, calculated as the ratio of extra-EU imports to total EU exports

Main findings

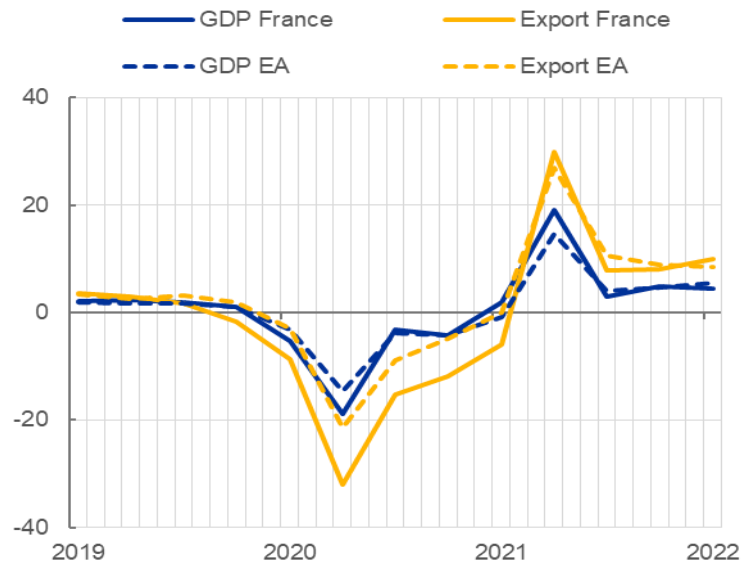
- Participation in GVC increased firms' vulnerability during the pandemic, in terms of both export performance and probability of survival in the export market
- Compared to non-GVC exporters, GVC firms were hit harder during the supply bottleneck period, the negative impact of supply disruptions being higher for firms located relatively more downstream
- More diversified sourcing networks for core imported inputs partially shielded companies from shocks

Thank you

Background slides

A view to the pandemic cycle

GDP vs Export growth, France and EA (y-o-y percentage change)

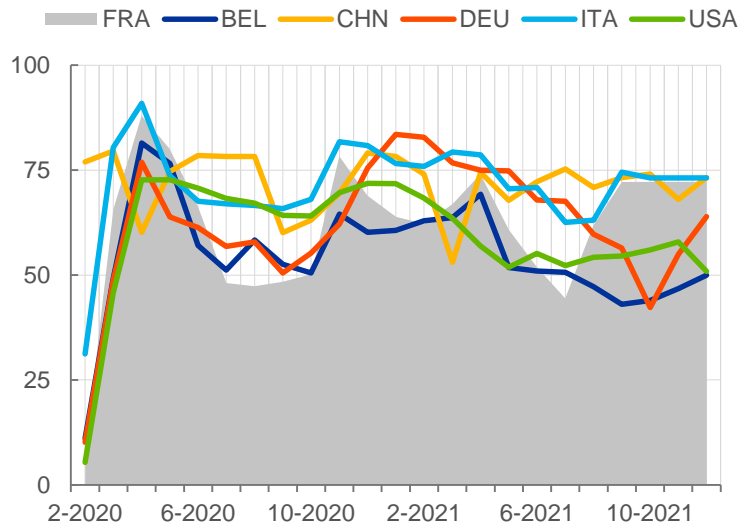


Sources: Eurostat and ECB calculations.

Note: Gross domestic product at market prices, Domestic currency (incl. conversion to current currency made using a fix parity), Chain linked volume (rebased), Non transformed data, Calendar and seasonally adjusted data.

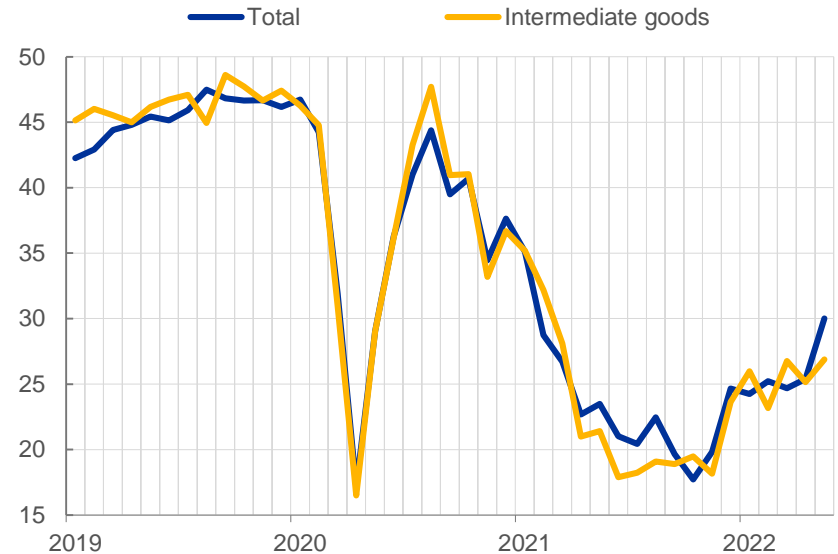
A view to the pandemic cycle

Oxford Stringency Index for France's top 5 import partners



Sources: Oxford COVID-19 Government Response Tracker and ECB calculations.
Note: Monthly averages of daily indexes. The index records the strictness of 'lockdown style' policies that primarily restrict people's behaviour.

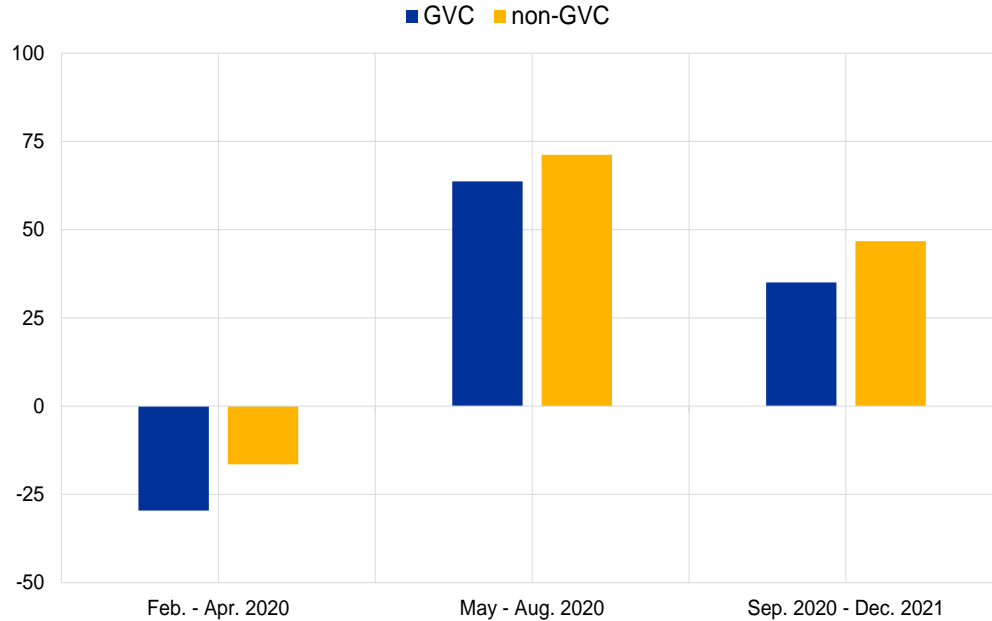
Suppliers' delivery times in manufacturing, France



Sources: European Commission, IHS Markit, and ECB calculations.
Note: Results of the Purchasing Manager's Survey (PMI). 50 indicates no change in delivery times on the prior month. Latest observation: May 2022.

GVC experienced the sharpest fall in exports and recovered at a slower pace

Export growth rate by GVC status and COVID-19 phases
(y-o-y percentage change)



Source: French Customs and ECB staff calculations.

Effect of GVC participation, robustness checks

(difference-in-differences)

	(1)	(2)	(3)	(4)	(5)
In Export _{it}	Main	No carry-along trade	3-month continuous exporter	6-month continuous importer for GVC	Control for demand
GVC _i *COVID19 _t	-0.0768*** (0.00967)	-0.118*** (0.0142)	-0.0643*** (0.00847)	-0.0685*** (0.00994)	-0.0405*** (0.00709)
Constant	11.67*** (0.00364)	10.55*** (0.00418)	11.35*** (0.00297)	11.80*** (0.00359)	9.530*** (0.00294)
Observations	1,156,272	657,060	1,344,392	967,802	8,832,815
R-squared	0.823	0.691	0.816	0.837	0.414
Firm FE	YES	YES	YES	YES	YES
Time FE	YES	YES	YES	YES	YES
Destination FE	NO	NO	NO	NO	YES

Note: Robust standard errors in parentheses. Significance at *** p<0.01, ** p<0.05, * p<0.1. In contrast to the firm-time estimates in columns 1-4, column 5 is estimated at the firm-time-country level (the dependent variable is $\ln \text{Export}_{itc}$, the logarithm of the value of firm i 's exports at time t in country c).

Effect of GVC participation by phase and by sector

(difference-in-differences)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
In Export _{it}	Agriculture & Food	Basic metals and metal products	Chemicals plastics and non-metallic mineral product	Computer electronic equipment and machinery	Mining and quarrying	Motor vehicles and transport equipment	Other services	Textiles	Wood and paper
GVC _i *COVID19phase1 _t	0.0306 (0.0216)	-0.00693 (0.0422)	-0.0307 (0.0298)	-0.00684 (0.0293)	-0.00949 (0.0911)	0.103** (0.0448)	-0.0472 (0.0591)	-0.150*** (0.0546)	-0.0102 (0.0394)
GVC _i *COVID19phase2 _t	-0.0219 (0.0219)	-0.0189 (0.0424)	-0.0334 (0.0284)	-0.0257 (0.0280)	-0.155* (0.0854)	0.0258 (0.0430)	-0.105 (0.0659)	-0.0268 (0.0571)	0.0130 (0.0394)
GVC _i *COVID19phase3 _t	-0.0433** (0.0193)	0.0435 (0.0377)	-0.0149 (0.0257)	-0.00642 (0.0264)	-0.149** (0.0736)	-0.132*** (0.0396)	-0.0420 (0.0562)	-0.130** (0.0514)	-0.114*** (0.0332)
Constant	10.90*** (0.00515)	9.264*** (0.0142)	10.02*** (0.00971)	10.54*** (0.00967)	8.395*** (0.0282)	10.42*** (0.0138)	7.217*** (0.0197)	9.585*** (0.0198)	8.170*** (0.0124)
Observations	221,226	293,991	453,467	527,138	22,283	129,504	81,772	218,239	188,701
R-squared	0.873	0.818	0.857	0.804	0.883	0.837	0.786	0.827	0.830
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Effect of GVC participation by firm-characteristics

(difference-in-differences)

In Export _{it}	(1) Inventory	(2) Productivity
GVC _i *below median characteristic _i *COVID19 _t	-0.0572*** (0.00991)	-0.0843*** (0.00984)
GVC _i *above median characteristic _i *COVID19 _t	-0.0500*** (0.00947)	-0.0257*** (0.00953)
Constant	10.89*** (0.00432)	10.89*** (0.00431)
Observations	1,110,148	1,110,148
R-squared	0.807	0.807
Firm FE	YES	YES
Time FE	YES	YES

Probability of survival in the export market, effect of GVC participation

(Logit model)

$$1_{it} = \alpha + \beta_1 GVC_i + \beta_2 GVC_i * COVID19_t + \beta_3 COVID19_t + \varepsilon_{it}$$

Exporter status _{it}	(1) General- odds ratio	(2) General- marginal effect	(3) By phase -odds ratio	(4) By phase- marginal effect
$GVC_i * COVID19_t$	-0.210*** (0.0171)	-0.0117*** (0.000954)		
$COVID19_t$	-0.629*** (0.0140)	-0.0350*** (0.000784)		
GVC_i	0.864*** (0.0135)	0.0480*** (0.000765)	0.864*** (0.0135)	0.0480*** (0.000764)
$GVC_i * COVID19_{phase1_t}$			-0.209*** (0.0344)	-0.0116*** (0.00191)
$GVC_i * COVID19_{phase2_t}$			-0.133*** (0.0314)	-0.00741*** (0.00174)
$GVC_i * COVID19_{phase3_t}$			-0.222*** (0.0182)	-0.0124*** (0.00101)
$COVID19_{phase1_t}$			-0.427*** (0.0285)	-0.0237*** (0.00159)
$COVID19_{phase2_t}$			-0.365*** (0.0258)	-0.0203*** (0.00144)
$COVID19_{phase3_t}$			-0.720*** (0.0149)	-0.0400*** (0.000835)
Constant	2.553*** (0.0109)		2.553*** (0.0109)	
Observations	1,207,872	1,207,872	1,207,872	1,207,872
Firm FE	NO	NO	NO	NO
Time FE	NO	NO	NO	NO

Effect of GVC position

(Generalised difference-in-differences)

$$\ln Export_{it} = \alpha + \beta_1 GVC_i * COVID19_t + \beta_2 GVC_i * GVC\ position_i * COVID19_t + FE_i + FE_t + \varepsilon_{it}$$

In Export _{it}	(1) Simple average between imports upstreamness and exports upstreamness	(2) Exports upstreamness	(3) Imports upstreamness	(4) Simple average between imports upstreamness and exports upstreamness	(5) Exports upstreamness	(6) Imports upstreamness
GVC _i *GVCposition _i *COVID19 _t	0.0371*** (0.0103)	0.000815 (0.00971)	0.0281*** (0.00731)			
GVC _i *COVID19 _t	-0.158*** (0.0248)	-0.0798*** (0.0107)	-0.137*** (0.0188)			
GVC _i *GVCposition _i *COVID19phase1 _t				0.0840*** (0.0117)	0.0856*** (0.0113)	0.0451*** (0.00854)
GVC _i *GVCposition _i *COVID19phase2 _t				-0.0143 (0.0116)	-0.0200* (0.0113)	-0.00930 (0.00838)
GVC _i *GVCposition _i *COVID19phase3 _t				0.0414*** (0.0119)	-0.00995 (0.0112)	0.0346*** (0.00851)
GVC _i *COVID19phase1 _t				-0.214*** (0.0286)	-0.0495*** (0.0132)	-0.129*** (0.0222)
GVC _i *COVID19phase2 _t				-0.0227 (0.0284)	-0.0498*** (0.0131)	-0.0340 (0.0219)
GVC _i *COVID19phase3 _t				-0.183*** (0.0287)	-0.0935*** (0.0124)	-0.166*** (0.0219)
Constant				11.60*** (0.00406)	11.60*** (0.00977)	11.60*** (0.00406)
Observations	1,083,094	1,083,094	1,083,094	1,083,094	1,083,094	1,083,094
R-squared	0.819	0.819	0.819	0.819	0.819	0.819
Firm FE	YES	YES	YES	YES	YES	YES
Time FE	YES	YES	YES	YES	YES	YES

Effect of GVC position on survival probability

$$\mathbb{1}_{it} = \alpha + \beta_1 \text{GVC}_i + \beta_2 \text{GVC}_i * \text{COVID19}_t + \beta_3 \text{GVC}_i * \text{GVC position}_i * \text{COVID19}_t + \beta_4 \text{COVID19}_t + \varepsilon_{it}$$

Export status _{it}	(1) General- odds ratio	(2) General- marginal effects	(3) By phase -odds ratio	(4) By phase- marginal effects
GVC _i *GVCposition _i *COVID19 _t	1.021*** (0.0117)	0.0824*** (0.000951)		
GVC _i *COVID19 _t	-2.500*** (0.0262)	-0.202*** (0.00214)		
COVID19 _t	-0.272*** (0.00959)	-0.0219*** (0.000774)		
GVC _i	1.848*** (0.00998)	0.149*** (0.000827)	1.848*** (0.00998)	0.149*** (0.000826)
GVC _i *GVCposition _i *COVID19phase1 _t			1.161*** (0.0350)	0.0937*** (0.00282)
GVC _i *GVCposition _i *COVID19phase2 _t			1.064*** (0.0314)	0.0858*** (0.00253)
GVC _i *GVCposition _i *COVID19phase3 _t			0.994*** (0.0135)	0.0802*** (0.00110)
GVC _i *COVID19phase1 _t			-2.658*** (0.0716)	-0.214*** (0.00579)
GVC _i *COVID19phase2 _t			-2.417*** (0.0647)	-0.195*** (0.00523)
GVC _i *COVID19phase3 _t			-2.498*** (0.0299)	-0.202*** (0.00243)
COVID19phase1 _t			-0.204*** (0.0200)	-0.0165*** (0.00162)
COVID19phase2 _t			-0.161*** (0.0178)	-0.0130*** (0.00144)
COVID19phase3 _t			-0.311*** (0.0105)	-0.0251*** (0.000847)
Constant	1.303*** (0.00688)		1.303*** (0.00688)	
Observations	1,176,096	1,176,096	1,176,096	1,176,096
Firm FE	NO	NO	NO	NO
Time FE				

Effect of diversification by phase

In Export _{it}	(1) 1%	(2) 5%	(3) 10%	(4) 15%	(5) 20%	(6) 25%	(7) 30%
$GVC_i * DiversificationCoreProduct_i * COVID19phase1_t$	-0.0607*** (0.0180)	-0.0147 (0.0119)	-0.0117 (0.0111)	-0.00826 (0.0111)	-0.0100 (0.0113)	-0.00639 (0.0116)	-0.00881 (0.0119)
$GVC_i * DiversificationCoreProduct_i * COVID19phase2_t$	-0.0156 (0.0173)	0.0109 (0.0116)	0.00751 (0.0110)	0.0212* (0.0110)	0.0156 (0.0112)	0.0203* (0.0115)	0.0146 (0.0118)
$GVC_i * DiversificationCoreProduct_i * COVID19phase3_t$	-0.0124 (0.0191)	0.0146 (0.0123)	0.0151 (0.0114)	0.0240** (0.0113)	0.0220* (0.0115)	0.0308*** (0.0118)	0.0290** (0.0121)
$GVC_i * COVID19phase1_t$	-0.0316*** (0.0120)	-0.0338*** (0.0125)	-0.0333** (0.0129)	-0.0340** (0.0133)	-0.0325** (0.0137)	-0.0343** (0.0140)	-0.0324** (0.0144)
$GVC_i * COVID19phase2_t$	-0.0375*** (0.0119)	-0.0425*** (0.0123)	-0.0424*** (0.0128)	-0.0500*** (0.0131)	-0.0481*** (0.0135)	-0.0518*** (0.0139)	-0.0488*** (0.0143)
$GVC_i * COVID19phase3_t$	-0.0931*** (0.0113)	-0.0988*** (0.0118)	-0.101*** (0.0122)	-0.107*** (0.0126)	-0.107*** (0.0130)	-0.114*** (0.0134)	-0.114*** (0.0139)
Constant	11.67*** (0.00365)	11.67*** (0.00365)	11.67*** (0.00365)	11.67*** (0.00365)	11.67*** (0.00365)	11.67*** (0.00365)	11.67*** (0.00365)
Observations	1,156,272	1,156,272	1,156,272	1,156,272	1,156,272	1,156,272	1,156,272
R-squared	0.823	0.823	0.823	0.823	0.823	0.823	0.823
Firm FE	YES	YES	YES	YES	YES	YES	YES
Time FE	YES	YES	YES	YES	YES	YES	YES

Survival probability, effect of diversification

Export status _{it}	(1) General- odds ratio	(2) General- marginal effects	(3) By phase -odds ratio	(4) By phase- marginal effects
$GVC_i^*DiversificationCoreProudct25pct_i*COVID19_t$	0.688*** (0.0115)	0.0381*** (0.000647)		
$GVC_i*COVID19_t$	-0.582*** (0.0180)	-0.0322*** (0.00100)		
$COVID19_t$	-0.629*** (0.0140)	-0.0348*** (0.000781)		
GVC_i	0.864*** (0.0135)	0.0478*** (0.000762)	0.864*** (0.0135)	0.0478*** (0.000761)
$GVC_i^*DiversificationCoreProudct25pct_i*COVID19phase1_t$			0.587*** (0.0348)	0.0325*** (0.00193)
$GVC_i^*DiversificationCoreProudct25pct_i*COVID19phase2_t$			0.727*** (0.0322)	0.0402*** (0.00179)
$GVC_i^*DiversificationCoreProudct25pct_i*COVID19phase3_t$			0.697*** (0.0132)	0.0386*** (0.000739)
$GVC_i*COVID19phase1_t$			-0.531*** (0.0383)	-0.0294*** (0.00212)
$GVC_i*COVID19phase2_t$			-0.520*** (0.0346)	-0.0288*** (0.00192)
$GVC_i*COVID19phase3_t$			-0.599*** (0.0192)	-0.0332*** (0.00107)
$COVID19phase1_t$			-0.427*** (0.0285)	-0.0236*** (0.00158)
$COVID19phase2_t$			-0.365*** (0.0258)	-0.0202*** (0.00143)
$COVID19phase3_t$			-0.720*** (0.0149)	-0.0399*** (0.000832)
Constant	2.553*** (0.0109)		2.553*** (0.0109)	
Observations	1,207,872	1,207,872	1,207,872	1,207,872
Firm FE	NO	NO	NO	NO
Time FE				

Effect of importing strategic products

$$\ln Export_{it} = \alpha + \beta_1 GVC_i * strategic_i * COVID19_t + \beta_2 GVC_i * (1 - strategic_i) * COVID19_t + FE_i + FE_t + \varepsilon_{it}$$

ln Export _{it}	(1) General	(2) Phases
GVC _i *strategic product _i *COVID19 _t	-0.122*** (0.0381)	
GVC _i *non strategic product _i *COVID19 _t	-0.0778*** (0.0292)	
GVC _i *strategic product _i *COVID19phase1 _t		-0.0960** (0.0443)
GVC _i *strategic product _i *COVID19phase2 _t		-0.0824** (0.0410)
GVC _i *strategic product _i *COVID19phase3 _t		-0.137*** (0.0451)
GVC _i *non strategic product _i *COVID19phase1 _t		-0.0183 (0.0376)
GVC _i *non strategic product _i *COVID19phase2 _t		-0.0879** (0.0345)
GVC _i *non strategic product _i *COVID19phase3 _t		-0.0868** (0.0339)
Constant	11.63*** (0.0142)	11.63*** (0.0143)
Observations	88,794	88,794
R-squared	0.822	0.822
Firm FE	YES	YES
Time FE	YES	YES