UNIVERSITAS GADJAH MADA
Diagnosing Port Disruption by Economic Driver: Bulk Cargo Divergence at the Port of Rotterdam during COVID-19
Nadia Chairunnisa Yusarizqi, Choirunnisa Arifa, S.E., M.Sc., Ph.D., Ak., CA.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

REFERENCES

Abadie, A., Diamond, A., & Hainmueller, J. (2010). Synthetic control methods for comparative case studies: Estimating the effect of California's tobacco control program. Journal of the American Statistical Association, 105(490), 493–505. https://doi.org/10.1198/jasa.2009.ap08746

Agraaf. (2021). Agribulk overslag in Rotterdam fors gedaald na stijging in 2020. https://www.agraaf.nl/artikel/413939-agribulk-overslag-in-rotterdam-fors-gedaald-na-stijging-in-2020

Argus Media. (2021). Europe, China coal demand supports Russian exports. https://www.argusmedia.com/en/news-and-insights/latest-market-news/2181010-europe-china-coal-demand-supports-russian-exports

Ayaz, İ. S., Bucak, U., Mollaoğlu, M., & Esmer, S. (2022). Resilience strategies of ports against Covid-19 in terms of chaos theory. Marine Policy, 146, 105323. https://doi.org/10.1016/j.marpol.2022.105323

CBS (Centraal Bureau voor de Statistiek). (2021, May 2). Luchtvaart in coronatijd: veel minder reizigers, iets minder vracht. https://www.cbs.nl/nl-nl/nieuws/2021/18/luchtvaart-in-coronatijd-veel-minder-reizigers-iets-minder-vracht

CBS (Centraal Bureau voor de Statistiek). (2022, February 4). Almost 25 percent more air passengers in 2021. https://www.cbs.nl/en-gb/news/2022/05/almost-25-percent-more-air-passengers-in-2021

CBS Statline. (2026). https://opendata.cbs.nl/#/CBS/nl/dataset/85598NED/table

Ederington, L. H., Fernando, C. S., Holland, K., & Lee, T. K. (2012). Contango in Cushing? Evidence on financial-physical interactions in the U.S. crude oil market. U.S. Energy Information Administration. https://www.eia.gov/finance/markets/reports_presentations/cc_arbitrage_executive.pdf

Ember. (2021). Soaring fossil gas costs responsible for EU electricity price increase. https://ember-energy.org/latest-insights/soaring-fossil-gas-costs-responsible-for-eu-electricity-price-increase/

Engormix. (2021). Europe's feed industry continues to rely on US soy. https://en.engormix.com/feed-machinery/feed-industry/europes-feed-industry-continues_n27157/

ESM Magazine. (2021). German farmers give up pig keeping as prices and demand low. https://esmmagazine.com/supply-chain/german-farmers-give-up-pig-keeping-as-prices-and-demand-low-157555

UNIVERSITAS GADJAH MADA
Diagnosing Port Disruption by Economic Driver: Bulk Cargo Divergence at the Port of Rotterdam during COVID-19
Nadia Chairunnisa Yusarizqi, Choirunnisa Arifa, S.E., M.Sc., Ph.D., Ak., CA.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

European Commission. (2020a, March 16). Guidelines for border management measures to protect health and ensure the availability of goods and essential services (2020/C 86 I/01). Official Journal of the European Union.

European Commission. (2020b, March 23). Communication from the Commission on the implementation of the Green Lanes under the Guidelines for border management measures (C(2020) 1897 final).

European Commission. (2020c). Short-term outlook – Agriculture and rural development.

European Commission. (2022, April 8). Quarterly market reports highlight unprecedented gas and power prices in the EU in Q4 2021. https://commission.europa.eu/news-and-media/news/quarterly-market-reports-highlight-unprecedented-gas-and-power-prices-eu-q4-2021-2022-04-08_en

European Parliamentary Research Service. (2020). Protecting the EU agri-food supply chain in the face of COVID-19. European Parliament. https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649360/EPRS_BRI(2020)649360_EN.pdf

Eurostat. (2020, April 2). Rotterdam: the largest freight port in the EU. https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20200402-2

Eurostat. (2022). Impact of Covid-19 crisis on construction. Statistics Explained. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Impact_of_Covid-19_crisis_on_construction

Eurostat. (2026). Production in industry - monthly data.

GEM Wiki. (n.d.). Gate LNG terminal. https://www.gem.wiki/Gate_LNG_Terminal

Geyer-Klingeberg, J., & Rathgeber, A. W. (2021). Determinants of the WTI-Brent price spread revisited. Journal of Futures Markets, 41(5), 736–757. https://doi.org/10.1002/fut.22184

Grimes, J. (2025, May 13). The impact of COVID on the price of steel in three phases. Beyond the Numbers: Prices & Spending, 14(4). U.S. Bureau of Labor Statistics. https://www.bls.gov/opub/btn/volume-14/the-impact-of-covid-on-the-price-of-steel-in-three-phases.htm

Havenbedrijf Rotterdam N.V. (2022). Jaarverslag 2021 [Annual report]. pp. 237–241.

UNIVERSITAS GADJAH MADA
Diagnosing Port Disruption by Economic Driver: Bulk Cargo Divergence at the Port of Rotterdam during COVID-19
Nadia Chairunnisa Yusarizqi, Choirunnisa Arifa, S.E., M.Sc., Ph.D., Ak., CA.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Hydrocarbon Engineering. (2016, September 1). Gate terminal expands to include a third berth. https://www.hydrocarbonengineering.com/tanks-terminals/31082016/gate-terminal-expands-to-include-a-third-berth-3991

ICIS. (2020a, April 2). INSIGHT: Europe chemical prices crash, 32% of refinery capacity restricted, offline. https://www.icis.com/explore/resources/news/2020/04/02/10489761/insight-europe-chemical-prices-crash-32-of-refinery-capacity-restricted-offline/

ICIS. (2020b, May 21). European gas markets plunge despite US LNG cancellations. https://www.icis.com/explore/resources/news/2020/05/21/10510039/european-gas-markets-plunge-despite-us-lng-cancellations/

International Energy Agency. (2020). Coal 2020. https://www.iea.org/reports/coal-2020

International Energy Agency. (2021). Gas market report Q4-2021: Main findings. https://www.iea.org/reports/gas-market-report-q4-2021/main-findings

Lee, H. L., Padmanabhan, V., & Whang, S. (1997). Information distortion in a supply chain: The bullwhip effect. Management Science, 43(4), 546–558.

Li, Z., Li, H., Zhang, Q., & Qi, X. (2024). Data-driven research on the impact of COVID-19 on the global container shipping network. Ocean & Coastal Management, 248, 106969.

Liu, J., Qi, Y., & Lyu, W. (2023). Port resilience in the post-COVID-19 era. Ocean & Coastal Management, 238, 106565. https://doi.org/10.1016/j.ocecoaman.2023.106565

Millefiori, L. M., Braca, P., Zissis, D., Spiliopoulos, G., Marano, S., Willett, P. K., & Carniel, S. (2021). COVID-19 impact on global maritime mobility. Scientific Reports, 11, 18039.

Natural Gas World. (2021). LNG in Europe: Current trends, the European LNG landscape and country focus. https://www.naturalgasworld.com/lng-in-europe-current-trends-the-european-lng-landscape-and-country-focus-91398

Notteboom, T., Pallis, T., & Rodrigue, J.-P. (2021). Disruptions and resilience in global container shipping and ports: The COVID-19 pandemic versus the 2008–2009 financial crisis. Maritime Economics and Logistics, 23(2), 179–210. https://doi.org/10.1057/s41278-020-00180-5

Olapoju, O. M. (2023). Appraising the impact of COVID-19 on trading volume of selected vessel types in sub-Saharan Africa. Journal of Shipping and Trade, 8(1), 1–12.

UNIVERSITAS GADJAH MADA
Diagnosing Port Disruption by Economic Driver: Bulk Cargo Divergence at the Port of Rotterdam during COVID-19
Nadia Chairunnisa Yusarizqi, Choirunnisa Arifa, S.E., M.Sc., Ph.D., Ak., CA.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

PGJ Online. (2017, May). First ever U.S. LNG cargo set sail for Northwest Europe. https://pgjonline.com/news/2017/05/first-ever-us-lng-cargo-set-sail-for-northwest-europe

Pork Business. (2021). German farmers give up pig keeping as pork prices and demand remain low. https://www.porkbusiness.com/news/industry/german-farmers-give-pig-keeping-pork-prices-and-demand-remain-low

Port of Rotterdam Authority. (2021). Throughput recovers in second half year at the fully operational port of Rotterdam [2020 annual results]. https://www.portofrotterdam.com/en/news-and-press-releases/throughput-recovers-second-half-year-fully-operational-port-rotterdam

Port of Rotterdam Authority. (2021b, April 28). Throughput in port of Rotterdam increases by 3.0% in first quarter of 2021 [Press release]. https://www.portofrotterdam.com/en/news-and-press-releases/throughput-port-rotterdam-increases-30-first-quarter-2021

Port of Rotterdam Authority. (2021c, July 19). Port of Rotterdam rebounds after corona dip [Press release]. https://www.portofrotterdam.com/en/news-and-press-releases/port-of-rotterdam-rebounds-after-corona-dip

Port of Rotterdam Authority. (2021d, November 19). Port of Rotterdam throughput rises substantially again in Q3 [Press release]. https://www.portofrotterdam.com/en/news-and-press-releases/port-of-rotterdam-throughput-rises-substantially-again-in-q3

Port of Rotterdam Authority. (2022). Throughput port of Rotterdam remained at the same level as last year [Press release]. https://www.portofrotterdam.com/en/news-and-press-releases/throughput-port-of-rotterdam-remained-at-the-same-level-as-last-year

Port of Rotterdam Authority. (2023). Port of Rotterdam throughput virtually unchanged in 2022 despite war and weakening economy [Press release]. https://www.portofrotterdam.com/en/news-and-press-releases/port-of-rotterdam-throughput-virtually-unchanged-in-2022-despite-war-and

Port of Rotterdam Authority. (2025). Decline in oil and oil products depresses throughput in the port of Rotterdam in first quarter of 2025 [Press release]. https://www.portofrotterdam.com/en/news-and-press-releases/decline-oil-oil-products-depresses-throughput-port-rotterdam-first-quarter-2025

Port of Rotterdam Authority. (2026). Throughput in the port of Rotterdam remains stable, with a slight decline of 0.7% [Press release]. https://www.portofrotterdam.com/en/news-and-press-releases/throughput-port-rotterdam-remains-stable-slight-decline-07

UNIVERSITAS GADJAH MADA
Diagnosing Port Disruption by Economic Driver: Bulk Cargo Divergence at the Port of Rotterdam during COVID-19
Nadia Chairunnisa Yusarizqi, Choirunnisa Arifa, S.E., M.Sc., Ph.D., Ak., CA.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Reuters. (2021, February 15). Volkswagen points finger at suppliers over car chip shortage. Yahoo Finance. https://finance.yahoo.com/news/volkswagen-points-finger-suppliers-over-164935337.html

S&P Global Commodity Insights. (n.d.). Platts CIF ARA 6000 NAR Coal Price Assessment.

S&P Global Commodity Insights. (2021, February 25). Europe steel demand recovery outpaces production growth, upholds prices. https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/metals/022521-europe-steel-demand-recovery-outpaces-production-growth-upholds-prices

S&P Global Platts. (2020a, May 6). OPEC has much cutting to do after April crude output surge: Platts survey. https://www.spglobal.com/commodity-insights/en/news-research/latest-news/crude-oil/050620-opec-has-much-cutting-to-do-after-april-crude-output-surge-sampp-global-platts-survey

S&P Global Platts. (2020b, August 17). Refinery news roundup: European refiners report lower runs in H1. https://www.spglobal.com/energy/en/news-research/latest-news/crude-oil/081720-refinery-news-roundup-european-refiners-report-lower-runs-in-h1

S&P Global Platts. (2021, January 19). Global refinery throughput expected to rebound in 2021: IEA. https://www.spglobal.com/energy/en/news-research/latest-news/crude-oil/011922-global-refinery-closures-outweigh-new-capacity-in-2021-iea

Sensfuß, F., Ragwitz, M., & Genoese, M. (2008). The merit-order effect: A detailed analysis of the price effect of renewable electricity generation on spot market prices in Germany. Energy Policy, 36(8), 3086–3094.

TankTerminals.com. (2020, April 27). Fuel oil floating storage options loom in Europe. https://tankterminals.com/news/fuel-oil-floating-storage-options-loom-in-europe/

U.S. Energy Information Administration. (2020, March 24). European natural gas storage inventories are at record-high levels at the end of winter. https://www.eia.gov/todayinenergy/detail.php?id=43235

U.S. Energy Information Administration. (n.d.). OPEC+ agreement to reduce production contributes to global oil market rebalancing. https://www.eia.gov/todayinenergy/detail.php?id=45236

World Steel Association. (2021). Global crude steel output decreases by 0.9% in 2020 [Press release]. https://worldsteel.org/steel-topics/statistics/

UNIVERSITAS
GADJAH MADA
**Diagnosing Port Disruption by Economic Driver: Bulk Cargo Divergence at the Port of Rotterdam during
COVID-19**
Nadia Chairunnisa Yusarizqi, Choirunnisa Arifa, S.E., M.Sc., Ph.D., Ak., CA.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

World Grain. (2020a, April 1). Shipping markets in flux amid COVID-19 chaos. https://www.world-grain.com/articles/13487-shipping-markets-in-flux-amid-covid-19-chaos

World Grain. (2020b, May 21). EU grains sector navigating COVID-19 crisis. https://www.world-grain.com/articles/13720-eu-grains-sector-navigating-covid-19-crisis