The (Un)Intended Consequences of Oil Sanctions Through the Dark Shipping of Sanctioned Oil

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Xiwen Bai[2], Jesús Fernández-Villaverde[5], Yiliang Li[3], Le Xu[1] and Francesco Zanetti[4]

[1]Shanghai Jiao Tong University, [2]Tsinghua University, [3]University of International Business and Economics, [4]University of Oxford, [5]University of Pennsylvania

We examine the rise of dark shipping -- oil tankers disabling AIS transceivers to evade detection -- amid Western sanctions on Iran, Syria, North Korea, Venezuela, and Russia. Using a machine learning-based ship clustering model, we track dark-shipped crude oil trade flows worldwide and detect unauthorized ship-to-ship transfers. From 2017 to 2023, dark ships transported an estimated 7.8 million metric tons of crude oil monthly -- 43\% of global seaborne crude exports -- with China absorbing 15\%. These sanctioned flows offset recorded declines in global oil exports but create distinct economic shifts. The U.S., a net oil exporter, faces lower oil prices but benefits from cheaper Chinese imports, driving deflationary growth. The EU, a net importer, contends with rising energy costs yet gains from Chinese demand, fuelling inflationary expansion. China, leveraging discounted oil, boosts industrial output, propagating global economic shocks. Our findings expose dark shipping's central role in reshaping oil markets and macroeconomic dynamics.