



STAYING AFLOAT

Shipping Networks in the Wake
of U.S. Sanctions on Venezuela

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ACKNOWLEDGEMENTS

C4ADS and IBI Consultants would like to thank all those who provided advice and guidance during this project. The author extends special gratitude to the peer reviewers of this report for their insightful feedback and advice, including Dr. Anouk S. Rigterink at International Crisis Group; Dror Salzman at Windward Intelligence; Caryn C. Hollis; and Juan Cruz at the Center for Strategic and International Studies. Finally, the author would like to thank her fellow team members Phil Kittock, Anna Wheeler, Max Kearns, Patrick Baine, Thomas Ewing, Ben Spevack, Jason Arterburn, and Mike Saidi, without whom the report would not have been possible.

C4ADS would also like to thank its technology partners, whose software and systems made this project possible.



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EXECUTIVE SUMMARY

This report is a descriptive analysis of maritime shipping activity in Venezuelan waters since the U.S. Department of Treasury's Office of Foreign Assets Control (OFAC) sanctioned Petróleos de Venezuela, S.A. (PDVSA) in January 2019. The United States sanctioned PDVSA as part of a strategy to increase pressure on the regime led by Nicolás Maduro. While sanctions have targeted a variety of sectors, their effect on Venezuela's crucial oil sector has been one of the most important ways for the United States to target Maduro and his inner circle.

In this report, we use publicly available information (PAI) to compare vessel activity in the Venezuelan exclusive economic zone (EEZ) before and after Executive Order (E.O.) 13850 was applied to Venezuela's oil sector on January 28, 2019. Through our analysis of AIS data from premier maritime analytics platform Windward and corporate network data from IHS Markit, we highlight trends in tanker vessel activity such as port calls and dark voyages in order to highlight the ways E.O. 13850 disrupted shipping networks active in the Venezuelan oil sector.

We find three key trends in the year after the designation of PDVSA:

- **First, as recorded by AIS, port calls in the Venezuelan EEZ decreased by 46 percent, but dark voyages only decreased by two percent.** Despite the heightened risk created by U.S. sanctions, more than 1,500 port calls were still detectable through AIS data in the year after PDVSA was designated.
- **Second, China, India and Cuba were top destinations for tanker vessels leaving Venezuelan ports.** In the year after sanctions, vessels leaving Venezuelan ports directly visited over 40 international destinations.
- **Third, while many shipping companies, as represented by vessels under their control, stopped transporting Venezuelan oil, others entered or increased their involvement in the Venezuelan oil sector.** Over 100 tanker vessels made their first port call in Venezuelan waters after sanctions were imposed on Venezuela's oil sector.

In this report, we illustrate the effects of U.S. sanctions on shipping networks and activity in the Venezuelan EEZ before the COVID-19 pandemic, the crashing of the world petroleum market, and the designation of Russian oil brokerage firm Rosneft Trading, S.A. in February 2020. We seek to provide a quantitative basis for analysis of the effect of unilateral sanctions on multinational oil trading networks, as well as of the countermeasures and adaptations undertaken by networks supporting the Maduro regime in response to U.S. sanctions. In so doing, we provide a comparison to other sanctions regimes with a prominent maritime element, such as those against North Korea and Iran.

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DEFINITIONS

- **Group Owner:** A group owner provides the controlling interest behind a ship and is the ultimate beneficiary from the ownership.¹
- **Registered Owner:** A registered owner provides the legal title of ownership that appears on a vessel's registration documents. A registered owner may be a so-called "brass-plate" company created on paper to legally own a ship and potentially to limit liability for the owner and/or provide benefit from offshore tax laws.²
- **Ship Manager:** This is the company designated by the ship owner to be responsible for the management of the ship and may be an owner-related company, or a third-party manager.³
- **Operator:** The company responsible for making employment decisions of the vessel. Where the vessel is sub-chartered to another company or several companies in a chain, the operator can define where the vessel will be deployed in order to load and discharge cargo or provide services will be considered as the operator. As the direct beneficiary of the profits from the operation of a ship, the vessel operator is usually responsible for purchasing of bunkers and port services.⁴
- **Automatic Identification System (AIS):** Ships use AIS transponders to provide information about the ship, such as identity, position, course and speed, to other ships and to coastal authorities automatically. In 2000, the International Maritime Organization (IMO) adopted the requirement for all ships of 300 gross tonnage and upwards engaged on international voyages to carry AIS, effective December 2004.⁵
- **IMO Number:** The IMO ship identification number is made of the three letters "IMO" followed by a seven-digit number assigned to all ships by IHS Maritime when constructed. IMO numbers are unique to each ship. The IMO ship identification number scheme was introduced as a measure aimed at enhancing maritime safety.⁶
- **Port Call:** A vessel makes a port call when its AIS transmission data reflects presence in the close vicinity of a port, as defined by Windward, for an extended period of time, enough to indicate possibly interaction with the port or port's authorities.⁷
- **Dark Voyage:** For purposes of this analysis, a dark voyage, also referred to in this report as "dark activity," is an AIS transmission gap beginning within the Venezuelan Exclusive Economic Zone (EEZ) that lasts long enough for a vessel to conduct trade or other economic activity at a Venezuelan port.⁸ While dark voyages can begin in foreign waters, this analysis is limited to those beginning in the Venezuelan EEZ.

In this report, along with the definitions listed above, we refer to the period between January 28, 2018 and January 27, 2019 as the year "before sanctions" or the "pre-sanctions" period, and

¹ IHS Markit

² IHS Markit

³ IHS Markit

⁴ IHS Markit

⁵ AIS Transponders. International Maritime Organization. Retrieved from:

<http://www.imo.org/en/OurWork/Safety/Navigation/Pages/AIS.aspx>

⁶ IMO Identification Number Schemes. International Maritime Organization. Retrieved from:

<http://www.imo.org/en/OurWork/MSAS/Pages/IMO-identification-number-scheme.aspx>

⁷ Windward

⁸ Windward

the period between January 28, 2019 and January 28, 2020 as the year “after sanctions” or the “post-sanctions” period.

We also refer to vessels’ voyages to foreign countries after leaving Venezuela. Using AIS data from Windward, we were able to summarize destinations of vessels after they made a port call in Venezuela.⁹ In other words, we analyzed two data points in each vessel’s AIS transmissions during our period of study: the first being a port call in Venezuela (the starting point of our dataset), and the second being the location of the port call directly following. In this way, when we refer to a voyage as a “Venezuela-China” voyage, we are referring to a voyage that began as a port call in Venezuela and ended with a port call in China.

⁹ While other data sources, such as local port records, satellite imagery, and alternative vessel positioning systems, could provide additional context on a given vessel voyage, we limited our analysis to information provided by AIS.

INTRODUCTION

Before January 2019, Venezuela's oil trade accounted for more than 95 percent of the country's export revenue and provided the country with an important source of foreign currency.^{10 11} After peaking at 3 million barrels per day (bpd) in production in 1998, output had slowed to about 2 million bpd by 2004, and by the time OFAC sanctions were imposed, PDVSA was producing less than 2 million bpd.¹² As production tumbled and oil prices fell, revenue earned from PDVSA for the Venezuelan state fell from about \$107 billion in 2012 to \$20 billion in 2018 and has continued to drop since.¹³ This economic implosion has led to a humanitarian catastrophe, fueling the largest refugee crisis in the hemisphere—some 5 million people have fled Venezuela over the past 5 years.¹⁴

Venezuela's oil revenues are falling against a backdrop of grand corruption that has further impoverished Venezuela.¹⁵ Research has detailed how, for the past 15 years, an alliance of states and non-state armed actors has used PDVSA and its sprawling international network to loot Venezuelan state coffers, launder billions of dollars in proceeds from illicit activities such as drug trafficking and illicit gold sales, and empower criminal groups in the region.¹⁶ The United States, Spain, and other jurisdictions have investigated and prosecuted money laundering crimes linked to PDVSA in recent years.^{17 18 19} Investigative journalists in Latin America have also joined forces to investigate and expose irregularities in trade deals linked to PDVSA, the Maduro regime, and regional allies.²⁰ Now, while under increased pressure from sanctions and after years of mismanagement of refinement facilities, domestic fuel shortages have led Venezuela to seek relief from other states targeted by U.S. sanctions. In May 2020, Iran sent five tankers of gasoline to Venezuela.²¹ Gasoline and Iranian aid in repairing Venezuelan oil refineries was

¹⁰ Eaton, C. (2019, May 2). Explainer: U.S. Sanctions and Venezuela's Exports and Imports. Reuters. Retrieved from: <https://www.reuters.com/article/us-venezuela-politics-crude-exports-expl/explainer-u-s-sanctions-and-venezuelas-exports-and-imports-idUSKCN1S82BI>

¹¹ Venezuela facts and figures (2019). Organization of the Petroleum Exporting Countries. Retrieved from: https://www.opec.org/opec_web/en/about_us/171.htm

¹² Crude Oil Production, Venezuela, Monthly (2020). U.S. Energy Information Administration. Retrieved from: https://www.eia.gov/opendata/qb.php?category=1039874&sid=STEO.COPR_VE.M

¹³ Ulmer, A. and Parraga, M. (2018, December 26). Special Report: Oil output goes AWOL in Venezuela as soldiers run PDVSA. Retrieved from: <https://www.reuters.com/article/us-venezuela-pdvsa-military-specialrepor/special-report-oil-output-goes-awol-in-venezuela-as-soldiers-run-pdvsa-idUSKCN1OP0RZ>

¹⁴ Plataforma de Coordinación para refugiados y migrantes de Venezuela. OIM and UNHCR. (2019, December 5). Retrieved from: <https://r4v.info/es/situations/platform>.

¹⁵ Farah, D. and Yates, C. (March 2020). Turmoil in the Western Hemisphere: The Role of the Bolivarian Joint Criminal Enterprise in Latin America's Unrest. Retrieved from: https://www.ibiconsultants.net/_pdf/turmoil-in-the-western-hemisphere-published.pdf

¹⁶ Farah, D. and Yates, C. (May 2019). Maduro's Last Stand. Retrieved from: https://www.ibiconsultants.net/_pdf/maduros-last-stand.pdf

¹⁷ Weaver, J. and Delgado, A. (2019, November 3). Venezuela's business elite face scrutiny in \$1.2 billion money laundering case. Miami Herald. Retrieved from: <https://www.miamiherald.com/news/local/article236793383.html>

¹⁸ Hernandez, J. and Irujo, J. (2019, July 20). Se fuga un ex alto cargo de Chávez detenido en Madrid por corrupción. El País. Retrieved from: https://elpais.com/politica/2019/07/19/actualidad/1563560665_386746.html

¹⁹ Arrestan a sospechosos de participar en masiva red de lavado que robó \$1,200 millones a la petrolera venezolana Pdvsa. (2018, July 25). Univision. Retrieved from: <https://www.univision.com/noticias/america-latina/arrestan-a-sospechosos-de-participar-en-masiva-red-de-lavado-que-robo-1-200-millones-a-la-petrolera-venezolana-pdvsa>

²⁰ Petrofraude. (2019). Connectas. Retrieved from: <https://www.connectas.org/especiales/petrofraude/#>

²¹ Faucon, B. and Talley, I. (2020, May 28). Wielding Sanctions, U.S. Disrupts Iranian Fuel Shipments to Venezuela. The Wall Street Journal. Retrieved from: <https://www.wsj.com/articles/u-s-threatens-sanctions-to-deter-tankers-carrying-fuel-to-venezuela-11590669831>

reportedly paid for with gold shipments from Venezuela to Iran.²² While these incidents lie beyond the timeframe of the data used in this study, they showcase the adaptability and durability of networks facing sanctions.

PDVSA remains a key instrument of funding for the Maduro regime. In order to move oil to market and return profits to the state coffers, PDVSA has historically relied on network of buyers spread across the globe. Controlled domestically by PDVSA, the Venezuelan oil sector relies heavily, if not exclusively, on maritime transport to export oil. Domestically, PDVSA uses its pipelines for oil and gas distribution, but to reach countries such as the United States, Cuba, China, and India, tanker vessels are crucial to the movement of oil out of the South American petrostate.²³

This report maps tanker activity to show how the behavior of ships involved in the transport of Venezuelan oil changed after sanctions. In doing so, we seek to provide a quantitative basis for analysis of the effect of unilateral sanctions on multinational oil trading networks, as well as of the countermeasures and adaptations undertaken by networks supporting the Maduro regime in response to U.S. sanctions. *Our analysis does not prove nor imply that the vessels or networks profiled engaged in illicit activity.*

U.S. Sanctions on the Venezuelan Oil Sector

Announced by the U.S. Department of the Treasury on November 1, 2018, E.O. 13850 authorizes sanctions on persons operating in the Venezuelan gold sector, as well as other sectors as determined by the Secretary of the Treasury.²⁴ On January 28, 2019, the scope of E.O. 13850 was expanded to include the oil sector through OFAC's designation of PDVSA.²⁵ ²⁶ Under this designation, all property and interests belonging to PDVSA that are subject to U.S. jurisdiction are blocked, and U.S. entities are generally prohibited from engaging in transactions with PDVSA.²⁷

OFAC's sanctions on PDVSA have perhaps been, to date, the largest-scale OFAC designation under the Venezuela sanctions program in terms of economic impact, as the country was estimated to lose \$7 billion in blocked assets and up to \$11 billion in oil exports.²⁸ E.O. 13850 deprived PDVSA of its top crude oil customer: the United States. U.S. imports of Venezuelan crude oil dropped from over 213 million barrels in 2018 to just 33.5 million barrels in 2019.²⁹

²² Turkewitz, J. (2020, May 25). Oil-Starved Venezuela Celebrates Arrival of Tankers From Iran. The New York Times. Retrieved from: <https://www.nytimes.com/2020/05/25/world/americas/iranian-oil-tankers-venezuela.html>

²³ Transportation, Distribution and Commercialization of Gas. PDVSA. Retrieved from: http://www.pdvsa.com/index.php?option=com_content&view=article&id=6549&Itemid=1178&lang=en

²⁴ Executive Order 13850 of November 1, 2018: Blocking Property of Additional Persons Contributing to the Situation in Venezuela. U.S. Department of the Treasury. Retrieved from: https://www.treasury.gov/resource-center/sanctions/Programs/Documents/venezuela_eo_13850.pdf

²⁵ Determination Pursuant to Section 1(a)(i) of Executive Order 13850. (2019, May 9). U.S. Department of the Treasury. Retrieved from: https://www.treasury.gov/resource-center/sanctions/Programs/Documents/vz_sector_determination_defense_20190509.pdf

²⁶ Executive Order 13850 of November 1, 2018: Blocking Property of Additional Persons Contributing to the Situation in Venezuela. U.S. Department of the Treasury. Retrieved from: https://www.treasury.gov/resource-center/sanctions/Programs/Documents/venezuela_eo_13850.pdf

²⁷ Venezuela: Overview of U.S. Sanctions. (2020, June 2). Congressional Research Service. Retrieved from: <https://fas.org/sgp/crs/row/IF10715.pdf>

²⁸ Talley, I. and Bender, M. (2019, January 28). U.S. Imposes Sanctions on Venezuela's Oil Industry. The Wall Street Journal. Retrieved from: <https://www.wsj.com/articles/u-s-to-place-sanctions-on-venezuela-state-owned-petroleos-de-venezuela-11548708213>

²⁹ U.S. Imports from Venezuela of Crude Oil and Petroleum Products. (2020). U.S. Energy Information Administration. Retrieved from: <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mttimusve1&f=a>

Furthermore, the State Department and the Treasury Department have reportedly signaled to the oil sector that E.O. 13850 would be understood broadly and that any kind of oil trade with Venezuela, be it “direct, indirect or barter” could be treated as a violation of U.S. sanctions.³⁰ In this way, any entities designated under E.O. 13850 are blocked from dealing with U.S. entities, thereby restricting their economic activity and creating a relatively risky environment for business with PDVSA.^{31 32}

After January 2019, OFAC began to designate tanker vessels and associated companies under E.O. 13850 for operating in the Venezuelan oil sector. In an April 2019 action, for example, OFAC targeted shipping networks used in PDVSA's export of oil to Cuba, one of Venezuela's main regional allies.³³ Over the course of these actions, OFAC designated 28 tanker vessels and 18 shipping companies, not including 34 non-tanker vessels owned by PDVSA. OFAC has since delisted 15 vessels and 10 companies from those designations. For example, in September 2019 OFAC delisted two shipping companies and two tanker vessels after they terminated contracts with Cubametales, which chartered vessels to transport oil from Venezuela to Cuba.³⁴ As a result of these de-listings, there are 13 tanker vessels designated under E.O. 13850 at time of writing.

The combined effects of American sanctions and the ongoing collapse of the Venezuelan economy have had serious effects on maritime oil transport networks servicing the Venezuelan oil sector. In 2019, Venezuela suffered from widespread blackouts, which caused disruptions to extraction, transport, and export infrastructure. This in turn reduced the supply of crude oil available for loading onto transport vessels.^{35 36 37 38} Furthermore, after sanctions, some foreign shipping companies began winding down business with PDVSA.³⁹ For example, the German company Bernhard Schulte Shipmanagement (BSM), which had operated vessels under contract with PDVSA, announced in March 2019 that it would likely stop managing PDVSA-owned vessels due not only to the environment created by sanctions but also to the fact that PDV Marina, PDVSA's shipping subsidiary, owed the company at least \$15 million in unpaid bills.⁴⁰

³⁰ Payne, J. and Zhdannikov, D. (2018, March 28). Exclusive: U.S. orders foreign firms to further cut down on oil trades with Venezuela. Reuters. Retrieved from: <https://www.reuters.com/article/us-usa-venezuela-sanctions-exclusive/exclusive-us-orders-foreign-firms-to-further-cut-down-on-oil-trades-with-venezuela-idUSKCN1R92ET>

³¹ Specially Designated Nationals And Blocked Persons List. (2020, June 25). U.S. Department of the Treasury. Retrieved from: <https://www.treasury.gov/resource-center/sanctions/sdn-list/pages/default.aspx>

³² Basic Information on OFAC and Sanctions. “Executive Order 13850 ‘Blocking Property of Additional Persons Contributing to the Situation in Venezuela.’” U.S. Department of the Treasury. Retrieved from: https://www.treasury.gov/resource-center/faqs/Sanctions/Documents/faq_all.html

³³ Treasury Further Targets Entities and Vessels Moving Venezuelan Oil to Cuba. (2019, September 24). U.S. Department of the Treasury. Retrieved from: <https://home.treasury.gov/news/press-releases/sm784>

³⁴ Treasury Further Targets Entities and Vessels Moving Venezuelan Oil to Cuba. (2019, September 24). U.S. Department of the Treasury. Retrieved from: <https://home.treasury.gov/news/press-releases/sm784>

³⁵ Venezuela se vuelve a quedar sin luz. (2019, March 25). El Nacional. Retrieved from: https://www.elnacional.com/sociedad/venezuela-vuelve-quedar-sin-luz_276288/

³⁶ Cuarto apagón masivo en 2019 afecta 22 estados de Venezuela. Prodavinci. (2019, July 22). Retrieved from: <https://prodavinci.com/cuarto-apagon-masivo-en-2019-afecta-22-estados-de-venezuela/>

³⁷ Venezuela, otra vez sin luz: un apagón masivo affect a 11 estados del país. (2019, August 20). Infobae. Retrieved from: <https://www.infobae.com/america/venezuela/2019/08/20/sinluz-venezolanos-reportaron-un-apagon-masivo-en-caracas-y-miranda/>

³⁸ Guanipa, M. (2019, March 26). Apagón en Venezuela detiene operaciones de principal terminal petrolero Jose. Reuters. Retrieved from: <https://fta.reuters.com/articulo/petroleo-venezuela-apagon-idLTAKCN1R725X>

³⁹ Parraga, M. and Eaton, C. (2019, October 10). More oil traders, vessel operators shun links to Venezuela's oil. Reuters. Retrieved from: <https://www.reuters.com/article/us-global-shipping-venezuela/more-oil-traders-vessel-operators-shun-links-to-venezuelas-oil-idUSKBN1WP31X>

⁴⁰ BSM says likely to stop managing Venezuelan tankers soon. (2019, March 14). Reuters. Retrieved from: <https://www.reuters.com/article/us-venezuela-politics-tankers/bsm-says-likely-to-stop-managing-venezuelan-tankers-soon-idUSKCN1QV1FI>

BSM later moved to arrest a total of three tankers moored in Singapore and Portugal in May of that year.⁴¹ Further U.S. sanctions targeting entities active in Venezuela's oil sector in February 2020 appear to have generated a similar response from at least one shipping company that had reportedly remained active in Venezuela throughout 2019.⁴² In early March 2020, Mercantile & Maritime Trading, a Singapore-registered firm with a location in Turkey, announced that it would terminate its shipments of Venezuelan oil for Russian energy firm Rosneft due to U.S.-imposed sanctions on Rosneft's trading unit.⁴³

Tanker vessels are not only key to exporting crude oil and oil products from Venezuela—they also generate observable data on their activities, identities, and associated corporate networks. By analyzing changes in these data over time, we can observe the ways in which networks respond both to U.S. sanctions and heightened risk.

⁴¹ Parraga, M., Tan, F., and Guanipa, M. (2019, May 23). Exclusive: Operator of Venezuelan PDVSA's fleet seeks to detain tankers: document, sources. Reuters. Retrieved from: <https://ca.reuters.com/article/businessNews/idCAKCN1ST2AT-OCABS>

⁴² Treasury Targets Russian Oil Brokerage Firm for Supporting Illegitimate Maduro Regime. (2020, February 28). U.S. Department of the Treasury. Retrieved from: <https://home.treasury.gov/news/press-releases/sm909>

⁴³ Tanker owner says to end shipping of Rosneft's Venezuelan oil. (2020, March 2). Reuters. Retrieved from: <https://www.reuters.com/article/us-venezuela-oil-rosneft/tanker-owner-says-to-end-shipping-of-rosnefts-venezuelan-oil-idUSKBN20P17Q>

METHODOLOGY

This report leverages publicly available information (PAI) to analyze how shipping networks responded to U.S. sanctions on the Venezuelan oil sector in 2019. In our analysis, we enrich activities-based analysis of AIS transmissions with corporate network data to investigate the companies and people facilitating potential sanctions evasion at sea.

We present findings on AIS data collected from Windward, a premier maritime analytics platform, from January 28, 2018 through January 28, 2020. The vessels' AIS data were collected in two datasets, each corresponding to a year-long period of study, as specified in the Definitions section of this report. In order to measure the change in specific activities, we collected AIS data from voyages that satisfied either of the following criteria, as detected by Windward:

1. Vessels registered as tanker vessels that made port calls in the Venezuelan EEZ, based on AIS positional data and geofenced port locations
2. Vessels registered as tanker vessels that exhibited dark activity beginning in the Venezuelan EEZ⁴⁴

We collected data on port call activity, as it is a potential indication of loading or offloading of cargo, crude oil, or chemical products.⁴⁵ By including data on dark voyages, we capture vessels that potentially visited Venezuelan ports, yet went undetected due to long instances of lost AIS transmission. While we cannot assume all dark activity in the Venezuelan EEZ involved a visit (or visits) to ports, OFAC has identified AIS manipulation as a deceptive shipping practice employed to evade sanctions.^{46 47} This report focuses on changes in certain maritime activities, namely port calls and dark voyages, in Venezuelan waters as a result of U.S. sanctions on PDVSA. Further investigation could systematically analyze changes in other sanctions evasion tactics addressed by OFAC's May 2020 maritime advisory,⁴⁸ such as ship-to-ship transfers in the context of sanctions on Venezuela. GPS manipulation and other forms of interference with AIS data are other potential method of obfuscation that could merit further inquiry.

⁴⁴ We included dark activity in an effort to include vessels that were active in Venezuelan waters that may have not been detected by Windward's port call function. While we chose to limit our scope to dark activity in the Venezuelan EEZ, we acknowledge this as a limitation in our methodology, given the fact that vessels interacting with Venezuelan ports have the capability of turning off AIS transmissions beyond Venezuelan waters and entering them undetected. The *Princess Mary's* dark voyage, discussed in Section 1 of this report, illustrates this point.

⁴⁵ While other data, such as draft weightings, local port call records, and satellite imagery, could shed more light on potential loading and offloading of cargo, we did not include them in this study in a comprehensive way for several reasons. In the case of satellite imagery and local port call records, these were not available uniformly across jurisdictions studied. In the case of draft change information, because we set out to provide a comprehensive look at vessel voyage activity, and not commercial activity, we did not seek to use it in this case.

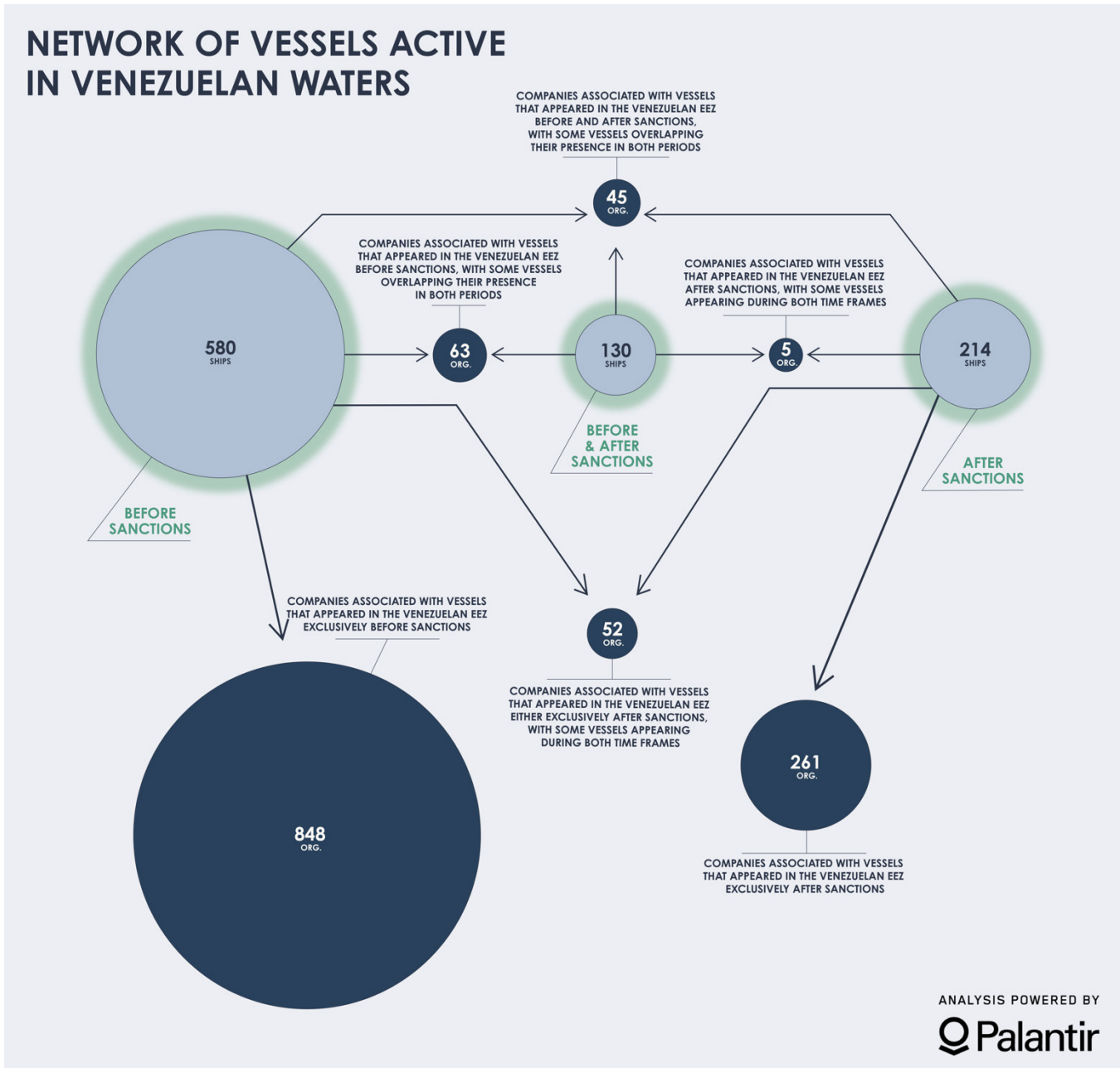
⁴⁶ Updated Guidance on Addressing North Korea's Illicit Shipping Practices. (2019, March 21). U.S. Department of State, U.S. Department of the Treasury, U.S. Coast Guard. Retrieved from: https://www.treasury.gov/resource-center/sanctions/Programs/Documents/dprk_vessel_advisory_03212019.pdf

⁴⁷ Sanctions Risks Related to Petroleum Shipments Involving Iran and Syria. (2019, March 25). U.S. Department of the Treasury. Retrieved from: https://www.treasury.gov/resource-center/sanctions/Programs/Documents/syria_shipping_advisory_03252019.pdf

⁴⁸ Guidance to Address Illicit Shipping and Sanctions Evasion Practices. (2020, May 14). U.S. Department of State, U.S. Department of the Treasury, U.S. Coast Guard. Retrieved from: https://www.treasury.gov/resource-center/sanctions/Programs/Documents/05142020_global_advisory_v1.pdf

A total of 924 unique vessels were captured in our data collection across both periods of study. In order to enrich activities-based data to build out the networks behind the vessels we identified, we collected corporate network data from IHS Markit (the leading industry source for corporate maritime data, vessel registration information, and the manager of the IMO number scheme), news media, and other sources of PAI such as corporate records. Finally, we structured our vessel and corporate network data using Palantir Foundry and Palantir Gotham. A visual summary of the data is included below in Figure 1.

Figure 1: Summary of Vessel and Network Data



SECTION 1:

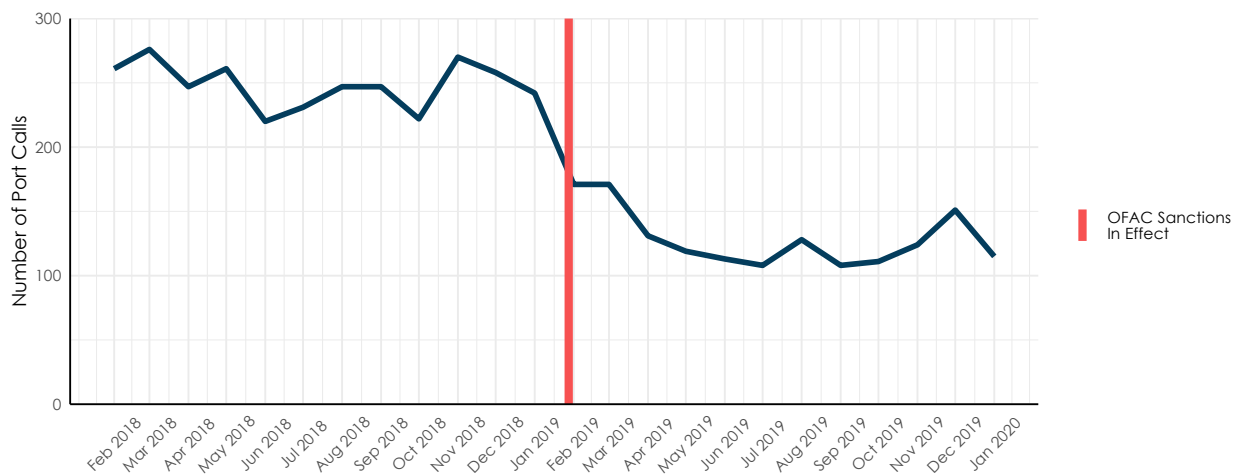
PORT CALLS AND DARK ACTIVITY IN VENEZUELAN WATERS

In the year following the application of E.O. 13850 to the Venezuelan oil sector, the number of recorded port calls by tankers in Venezuela decreased, as did the number of unique tanker vessels making such port calls. Over the same period, the number of instances of recorded dark activity in the Venezuelan EEZ slightly decreased.

Port Calls

According to AIS data, in the year following OFAC's January 2019 designation of PDVSA, port calls by tanker vessels in the Venezuelan EEZ dropped by roughly 46 percent. The year before sanctions saw 3,006 port calls by 704 unique vessels, while the year after sanctions saw 1,596 port calls by just 326 unique vessels.

Figure 2: Port Calls in the Venezuelan EEZ



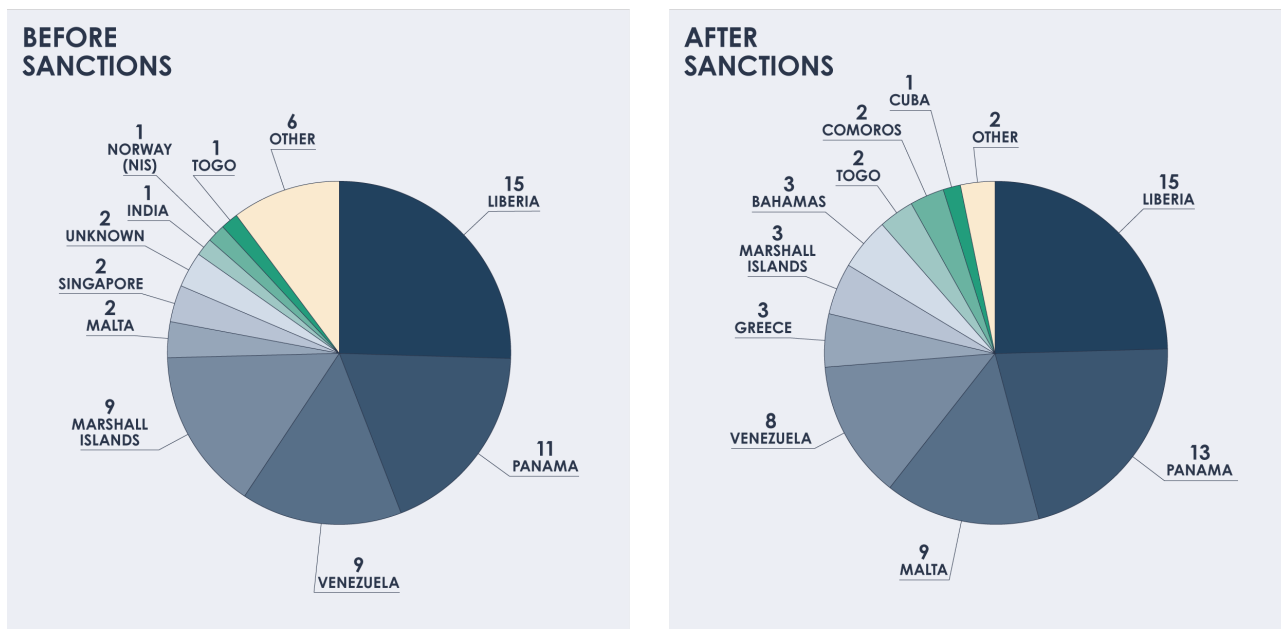
Dark Voyages

The number of dark voyages, on the other hand, remained relatively stable compared to port call activity, as did the number of unique vessels that undertook them. In the year prior to PDVSA's designation, 59 unique vessels completed a total of 159 dark voyages in the Venezuelan EEZ. In the year following sanctions, 61 vessels completed 156 dark voyages. The most common flags of registration for the vessels exhibiting dark activity both before and after sanctions were flags of convenience, as defined by the International Transport Workers'

Federation.^{49 50} Specifically, after PDVSA was designated, vessels flying the Liberian flag comprised approximately 25 percent of dark voyage vessels after sanctions, followed by vessels flying the Panamanian flag (21 percent of dark voyage vessels), and the Maltese flag (15 percent of dark voyage vessels).

Figure 3: Flags of Vessels Exhibiting Dark Activity in the Venezuelan EEZ

DARK ACTIVITY SHIPS: FLAG COUNT



The totality of dark activity conducted by tanker vessels in Venezuela is certainly greater than that captured in these statistics. For example, the *Princess Mary* (IMO 9295593), a Liberia-flagged crude oil tanker, reportedly loaded oil from José Oil Terminal (JOT) in early December 2019 during a dark voyage that began in Martinican waters and ended in Trinidadian waters.⁵¹ The *Princess Mary*, which had been sold to a Singaporean company the previous month, subsequently transferred its allegedly China-bound cargo to two smaller vessels off the coast of Togo.⁵² Rosneft reportedly chartered the *Princess Mary* for this voyage.⁵³ Expanding data collection parameters to include dark voyages beginning beyond Venezuelan waters would

⁴⁹ Flags of convenience. International Transport Workers' Federation. Retrieved from: <https://www.itfglobal.org/en/sector/seafarers/flags-of-convenience>

⁵⁰ Overall, the majority of vessels analyzed in this report were registered with flags of convenience (as designated by the International Transport Workers' Federation) during the period of study, indicating that, at minimum in the Venezuela case, the use of flags of convenience in oil and oil products transport is relatively common.

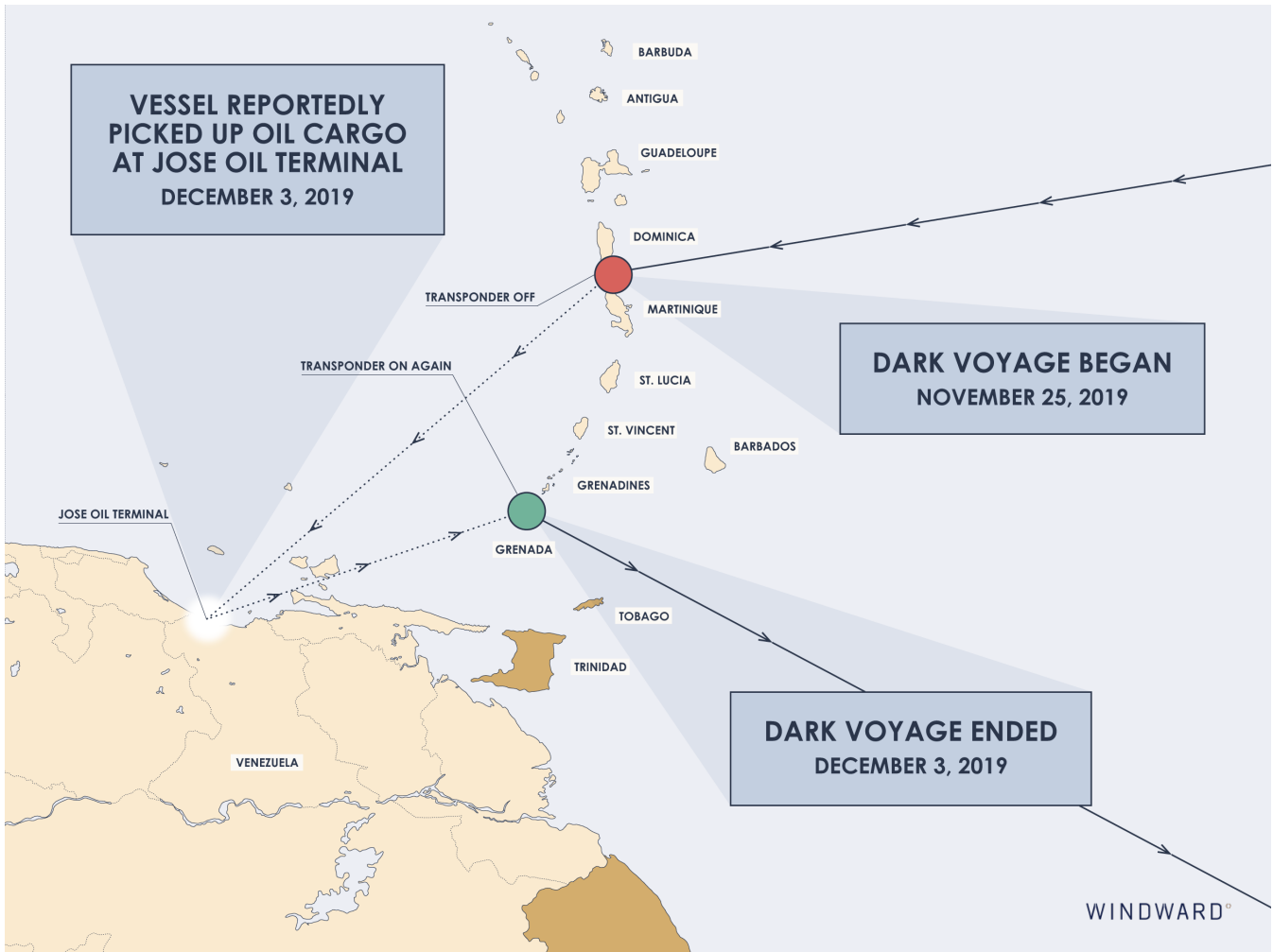
⁵¹ Faiola, A. and DeYoung, K. (2020, February 6). In the U.S. embargo on Venezuelan oil, Russia is a clear winner. Washington Post. Retrieved from: https://www.washingtonpost.com/world/the_americas/in-the-us-embargo-on-venezuelan-oil-russia-is-a-clear-winner/2020/02/06/c45ca39e-476e-11ea-91ab-ce439aa5c7c1_story.html

⁵² Faiola, A. and DeYoung, K. (2020, February 6). In the U.S. embargo on Venezuelan oil, Russia is a clear winner. Washington Post. Retrieved from: https://www.washingtonpost.com/world/the_americas/in-the-us-embargo-on-venezuelan-oil-russia-is-a-clear-winner/2020/02/06/c45ca39e-476e-11ea-91ab-ce439aa5c7c1_story.html

⁵³ Faiola, A. and DeYoung, K. (2020, February 6). In the U.S. embargo on Venezuelan oil, Russia is a clear winner. Washington Post. Retrieved from: https://www.washingtonpost.com/world/the_americas/in-the-us-embargo-on-venezuelan-oil-russia-is-a-clear-winner/2020/02/06/c45ca39e-476e-11ea-91ab-ce439aa5c7c1_story.html

likely introduce a significant number of false positives in the form of voyages entirely unrelated to Venezuelan oil trade. However, further analysis of cases like the voyage of the *Princess Mary* could identify dark voyage “hotspots” beyond Venezuelan waters that could generate a more targeted list of voyages at risk of involving Venezuelan oil trade for manual validation.

Figure 4: Princess Mary’s Dark Voyage (November 25 through December 3, 2019)

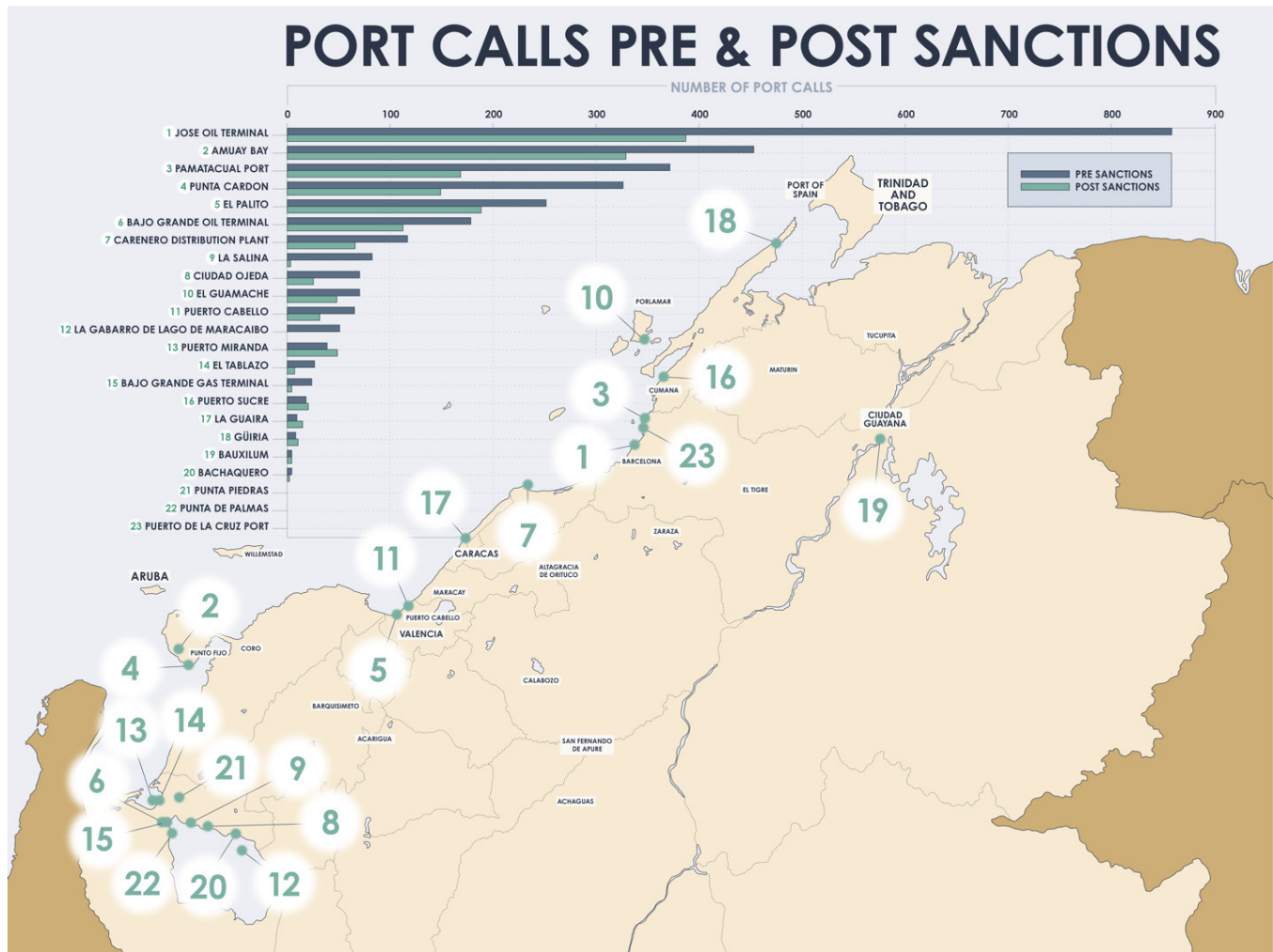


SECTION 2: VESSEL DESTINATIONS

As the number of trips between Venezuelan and U.S. ports dropped in 2019 after PDVSA was designated, voyages to Chinese, Indian, and Cuban ports continued. Most notably, the number of vessels active in the Venezuela-Cuba route increased, despite the fact that U.S. sanctions specifically targeted vessels exhibiting this activity in Venezuela-related shipping designations. In both the year before and the year after sanctions on PDVSA, domestic voyages between Venezuelan ports made up the majority of overall voyages.

Tanker Destination Trends within the Venezuelan EEZ

Figure 5: Number of Port Calls in Venezuela by Location



Tanker vessels visited a total of 23 Venezuelan ports in the year before sanctions on PDVSA, and 19 Venezuelan ports in the following year. The most visited port in each period was José Oil

Terminal (JOT), which services Venezuela's main crude oil facility. However, the number of visits to JOT dropped by almost 55 percent from one year to the next, which could be attributed to falling oil production in Venezuela as well as crude oil export decreases resulting from sanctions. Other top ports visited by tankers, such as Amuay Bay, Pamatacual Port, Punta Cardon, and El Palito, are located near PDVSA oil refineries, such as the Amuay refinery, the Puerto La Cruz refinery, and the El Palito refinery.⁵⁴

It is important to note that both before and after sanctions, the majority of vessels' port calls in Venezuela were followed immediately by another port call in Venezuela, even when overall tanker activity in Venezuelan waters decreased. The fact that a majority of tankers' voyages are domestic could indicate that they are meant to transport oil to various refineries around the country. In the year prior to PDVSA sanctions, 62 percent of port calls in Venezuela were followed by another port call in Venezuela. In the following year, 73 percent of port calls in Venezuela were followed by another port call in Venezuela. Although the percentage of domestic voyages out of the total increased in 2019, they decreased in absolute terms by almost 38 percent.

Tanker Destination Trends After Venezuelan Port Calls

By analyzing AIS transmissions that followed port calls in Venezuela, we identified the countries that were visited by tanker vessels after leaving Venezuelan waters in each period of study. In the year prior to OFAC's sanctions on PDVSA, tanker vessels visited ports located in 47 foreign countries directly after making port calls in Venezuela. In the following year, that figure dropped slightly to ports in 45 foreign countries.⁵⁵ Among pre-sanction port calls in Venezuela with an international destination, 51 percent had a destination in the United States. Additionally, voyages to nearby Caribbean islands were common and can most likely be attributed to the presence of PDVSA-leased and Citgo-owned refineries in the ABC islands (Aruba, Bonaire, Curaçao).⁵⁶ ⁵⁷ Voyages to India also made up five percent of foreign voyages from Venezuela, followed by Cuba (four percent) and China (four percent).

China and India were the top two foreign countries visited in the year following sanctions. Venezuela-China and Venezuela-India voyages each made up 13 percent of total voyages to foreign countries in that year, and Venezuela-Cuba voyages made up an additional 11 percent. While China, India, and Cuba became prominent destinations in voyage data in the

⁵⁴ Refinación. (2016). PDVSA. Retrieved from:

http://www.pdv.com/index.php?option=com_content&view=article&id=8841&Itemid=584&lang=es

⁵⁵ From the first year to the next, there is a significant increase in proportion of port calls that had no following port of call after Venezuela at the time in which data was integrated into analysis. Prior to sanctions, only one percent (34 port calls) of port calls in Venezuela had no detected following port of call. After sanctions, this figure grew to 7 percent (105 port calls) of port calls. This could be for a variety of reasons: At the time in which data for this report were collected, there is a possibility that vessels that had made port calls in Venezuela had not yet completed a voyage to a destination port, so the voyage was therefore logged by Windward as lacking a "next port of call." Another possibility is that vessels that have no logged port of call after their Venezuelan port call could have been moored, were awaiting orders at the time of data collection, or conducted a ship-to-ship transfer outside of a port area. Finally, the possibility exists that dark activity during a subsequent port call prevented Windward from logging the port call based on AIS data.

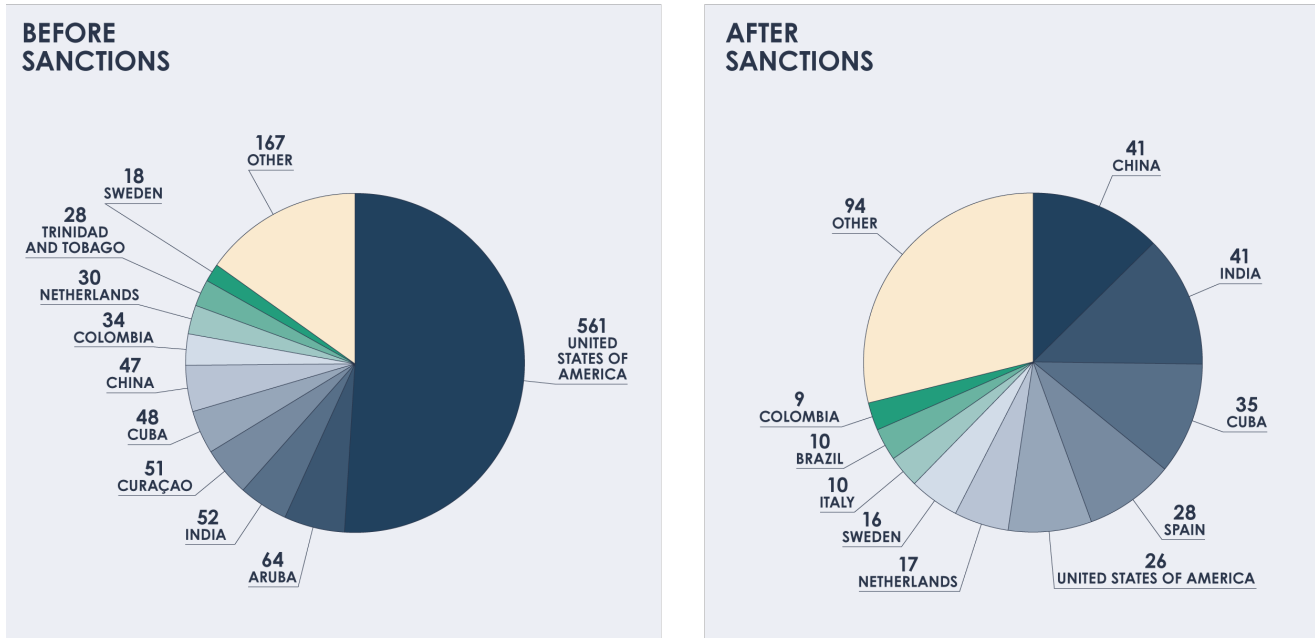
⁵⁶ Kassai, L., Fieser, E., and McDonald, M. First Citgo Cut Ties, No PDVSA's Caribbean Footprint is Waning. Bloomberg. Retrieved from: <https://www.bloomberg.com/news/articles/2019-03-05/first-citgo-cut-ties-now-pdvsa-s-caribbean-footprint-is-waning?sref=OrVjKRhh>

⁵⁷ Urribarri, S. (2019, February 18). Aruba refinery puts refurbishment on hold due to Venezuela sanctions. Reuters. Retrieved from: <https://www.reuters.com/article/us-venezuela-politics-refinery-aruba/aruba-refinery-puts-refurbishment-on-hold-due-to-venezuela-sanctions-idUSKCN1Q71NY>

year after sanctions, the total number of voyages to these countries decreased. This decrease in activity is also seen in the overall data on port calls mentioned in Section 1. Venezuela-U.S. voyages accounted for 26 voyages in our post-sanctions data. However, 24 out of the 26 voyages began within the 90-day wind-down period established after sanctions.^{58 59}

Figure 6: Destinations of Tankers Leaving Venezuela, by Number of Port Calls

COUNTRY ROUTES



Although the total number of foreign countries visited after Venezuela remains relatively stable across the two periods of study, the countries themselves differ slightly from the first year to the next. After sanctions on PDVSA, nine countries, including Bahrain, South Africa, and Portugal, were destinations that had not appeared in the previous year. These new countries account for a total of only 14 voyages. Ten countries, including Guatemala, Nicaragua, and Malaysia, had been destinations prior to sanctions and did not appear in the following year. One possible explanation for the drop in Malaysian voyages could be an increase in oil being transported via ship-to-ship transfers outside of port.⁶⁰ China has been reported as a destination for Venezuelan oil transferred in Malaysian waters.⁶¹

⁵⁸ Executive Order 13850 of November 1, 2018: General License No. 12. (2019, January 28). U.S. Department of the Treasury. Retrieved from: https://www.treasury.gov/resource-center/sanctions/Programs/Documents/venezuela_gl12.pdf

⁵⁹ OFAC FAQs: Other Sanctions Programs. U.S. Department of the Treasury. Retrieved from: https://www.treasury.gov/resource-center/faqs/sanctions/pages/faq_other.aspx#venezuela

⁶⁰ Wiese Bockmann, M. (2019, July 15). Venezuela mimics Iranian sanction-evasion tactics. Lloyd's List. Retrieved from: <https://lloydslist.maritimeintelligence.informa.com/LL1128385/Venezuela-mimics-Iranian-sanctionevasion-tactics>

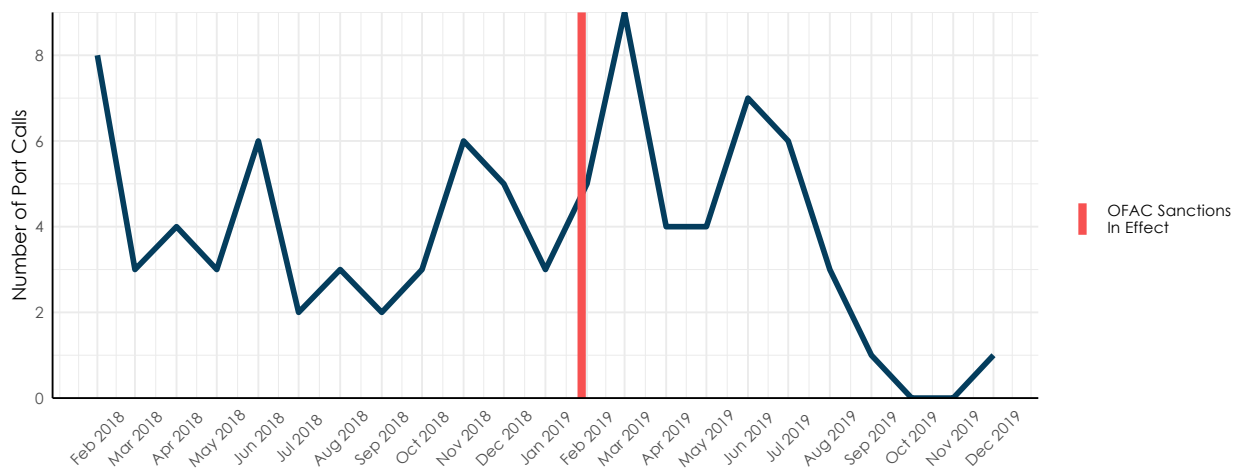
⁶¹ Aizhu, C. and Xu, M. (2019, August 25). China's July crude oil imports from Malaysia near record: customs. Reuters. Retrieved from: <https://www.reuters.com/article/us-china-oil-malaysia/chinas-july-crude-oil-imports-from-malaysia-near-record-customs-idUSKCN1VG07T>

Tanker Tracks: Key Routes Pre- and Post-Sanctions

The China Route

In the year before sanctions, at least 36 unique vessels completed a sum of 47 Venezuela-China voyages, and in the following year, 37 unique vessels completed a sum of 41 such voyages, a decrease of over 12 percent. In the year following sanctions, AIS data reflect an increase in Venezuela-China voyages in February 2019, at the same time that overall voyages from Venezuela to international destinations decreased. After fluctuations from February through May 2019, we observed a steady decrease in port calls to China for five consecutive months from June through October 2019.

Figure 7: Time-Series of Port Calls in Venezuela Followed by a Port Call in China



The drop in Venezuela-China voyages in 2019 can be explained in part by the fact that one of Venezuela's top oil customers, China National Petroleum Corporation (CNPC) halted its loading of Venezuelan oil in August and September 2019 in order to avoid sanctions.⁶² China has, however, reportedly received Venezuelan oil through purchases from Rosneft.⁶³

The India Route

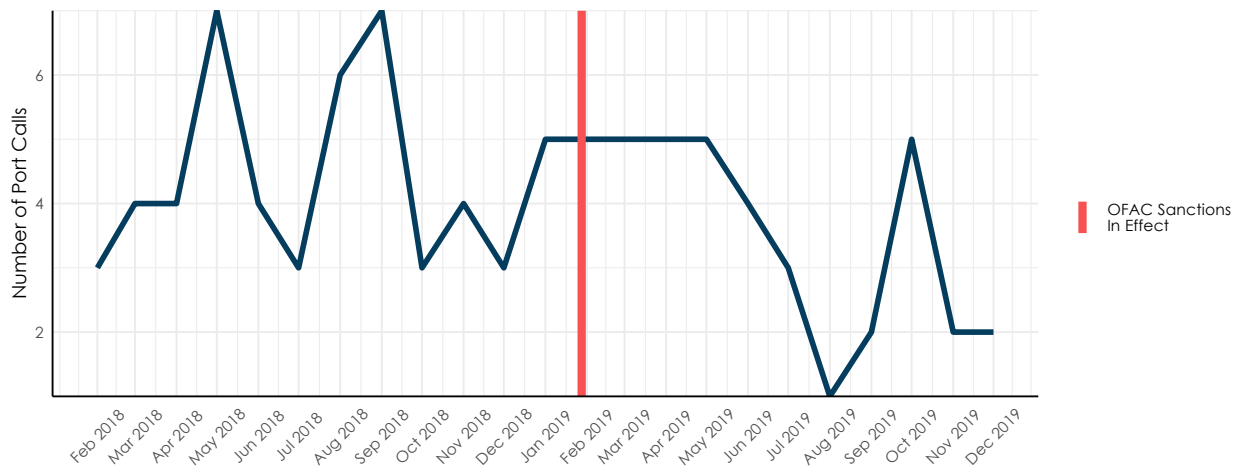
In the year before sanctions, at least 44 unique vessels completed a sum of 52 Venezuela-India voyages, and after sanctions, at least 34 unique vessels completed a sum of 41 such voyages, a 21 percent decrease from one year to the next. As demonstrated in Figure 8, the cadence of Venezuela-India voyages remained relatively stable from December 2018 through April 2019 and proceeded to drop from May through July 2019. After July, Venezuela-India voyages increased again for two months.

⁶² Aizhu, C. (2019, September 10). China CNPC skips Venezuelan oil loading for second month: sources. Reuters. Retrieved from: <https://www.reuters.com/article/us-china-venezuela-oil/china-cnpc-skips-venezuelan-oil-loading-for-second-month-sources-idUSKCN1VV0F1>

⁶³ Faiola, A. and DeYoung, K. (2020, February 6). In the U.S. embargo on Venezuelan oil, Russia is a clear winner. Washington Post. Retrieved from: https://www.washingtonpost.com/world/the_americas/in-the-us-embargo-on-venezuelan-oil-russia-is-a-clear-winner/2020/02/06/c45ca39e-476e-11ea-91ab-ce439aa5c7c1_story.html

India's presence in voyage data is unsurprising giving the country's year-by-year growth in demand for oil, which had been projected to overtake China's demand in 2020 before the coronavirus pandemic.⁶⁴ In India, just as in China, Rosneft has played an intermediary role in importing oil from Venezuela as it continued to receive Venezuelan oil in repayment for bilateral loans.⁶⁵ Reliance Energy, one of the two known Indian buyers of Venezuelan oil in 2019, has reportedly bought Venezuelan oil directly from PDVSA as well as from Rosneft.⁶⁶

Figure 8: Time-Series of Port Calls in Venezuela Followed by a Port Call in India



The Cuba Route

In the year before sanctions, at least 12 unique vessels completed a sum of 48 Venezuela-Cuba voyages, and after sanctions, at least 18 unique vessels completed a sum of 35 such voyages, a decrease of 27 percent. Anecdotal reporting suggests additional deliveries of Venezuelan oil to Cuba take place during dark voyages.^{67 68} The increase in vessels likely active in the Venezuela-Cuba oil trade is notable given OFAC's specific targeting of entities in this trade route. Some foreign companies have exhibited a potential aversion to the Venezuela-Cuba route. For example, the *Marigola* (IMO 9173070), an Italy-flagged LPG tanker managed by an Italian company, Carbofin SpA, completed one voyage from Venezuela to Cuba in March and April 2019, and subsequently changed its activity. In April 2019, OFAC sanctioned nine tanker vessels and four foreign shipping companies for engaging in shipping activity on the Venezuela-Cuba route.⁶⁹

⁶⁴ India's oil demand growth is set to overtake China by mid-2020s: IEA. (2020, January 10). The Hindu Business Line. Retrieved from: <https://www.thehindubusinessline.com/markets/commodities/indias-oil-demand-growth-is-set-to-overtake-china-by-mid-2020s-iea/article30531318.ece>

⁶⁵ Verma, N. and Parraga, M. (2019, October 15). Exclusive: India's Nayara supplying fuel to Rosneft in exchange for Venezuelan oil – sources. Reuters. Retrieved from: <https://www.reuters.com/article/us-venezuela-oil-india-exclusive/exclusive-indias-nayara-supplying-fuel-to-rosneft-in-exchange-for-venezuelan-oil-sources-idUSKBN1WU2N7>

⁶⁶ Verma, N. and Parraga, M. (2019, October 15). Exclusive: India's Nayara supplying fuel to Rosneft in exchange for Venezuelan oil – sources. Reuters. Retrieved from: <https://www.reuters.com/article/us-venezuela-oil-india-exclusive/exclusive-indias-nayara-supplying-fuel-to-rosneft-in-exchange-for-venezuelan-oil-sources-idUSKBN1WU2N7>

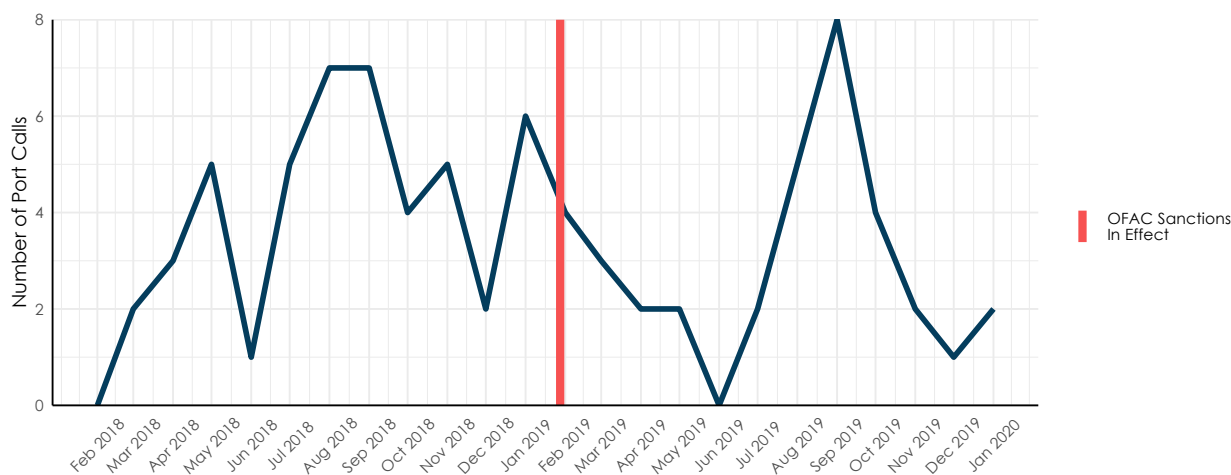
⁶⁷ La bitácora de los tanqueros fantasmas al servicio de la revolución. (2019, May 9). ArmandoInfo. Retrieved from: <https://armando.info/Reportajes/Details/2557>

⁶⁸ Fernández, M. and Díaz Espí, P. (2019, March 15). Nepotismo y 'actividades oscuras': el petróleo entre Cuba y Venezuela. Diario de Cuba. Retrieved from: https://diariodecuba.com/cuba/1552651454_45163.html

⁶⁹ Venezuela-related Designations. (2019, April 12). U.S. Department of the Treasury. Retrieved from: <https://www.treasury.gov/resource-center/sanctions/OFAC-Enforcement/Pages/20190412.aspx>

Venezuela's oil trade with Cuba has been the target of U.S. sanctions since April 5, 2019 when a crude oil tanker, the *Despina Andrianna* (IMO 9182667), was designated for transporting crude oil from Venezuela to Cuba between February and March 2019. A fleet of vessels owned by PDVSA, largely consisting of tugs, platforms, and other littoral vessels, was sanctioned simultaneously.

Figure 9: Time-Series of Port Calls in Venezuela Followed by a Port Call in Cuba



AIS data did not capture a Venezuela-Cuba voyage between April 6 and May 23, 2019, however, closer examination of individual vessel paths during that time reveals that at least one vessel, the *Petion*, likely made a Venezuela-Cuba voyage during this timeframe and went undetected due to dark activity in Cuban waters. Furthermore, in May 2019, Venezuela reportedly increased petroleum and gasoline exports to Cuba after the Maduro regime announced its continued commitment to sending subsidized oil to the Caribbean nation.^{70 71}

Along with dark activity, tanker vessels traveling between Venezuela and Cuba have exhibited identifier changes. For instance, the *E Pioneer* (IMO 9278686), a tanker vessel that has made Venezuela-Cuba voyages, has changed names twice and flags once since January 28, 2019, according to IHS Markit data.⁷² At the time of research, a Singapore-registered company, Navig8 Pte Ltd, reportedly operated the *E Pioneer*.⁷³ Navig8 Pte Ltd is reportedly the same company that formerly managed the *Princess Mary*, another vessel that has garnered attention for sanctions evasion in Venezuela.⁷⁴

⁷⁰ Venezuelan petroleum exports to Cuba surge in response to US sanctions. (2019, May 23). S&P Global. Retrieved from: <https://www.spglobal.com/platts/en/market-insights/latest-news/shipping/052319-venezuelan-petroleum-exports-to-cuba-surge-in-response-to-us-sanctions>

⁷¹ Sequera, V., Parraga, M., and Cohen, L. (2019, April 8). Reuters. Retrieved from: <https://www.reuters.com/article/us-venezuela-politics-cuba/venezuela-pledges-to-honor-oil-commitments-to-cuba-despite-sanctions-idUSKCN1RK2HZ>

⁷² IHS Markit

⁷³ IHS Markit

⁷⁴ Faiola, A. and DeYoung, K. (2020, February 6). In the U.S. embargo on Venezuelan oil, Russia is a clear winner. Washington Post. Retrieved from: https://www.washingtonpost.com/world/the_americas/in-the-us-embargo-on-venezuelan-oil-russia-is-a-clear-winner/2020/02/06/c45ca39e-476e-11ea-91ab-ce439aa5c7c1_story.html

Of the 18 vessels that completed Venezuela-Cuba voyages in the year after sanctions, half of them are operated, managed or owned by companies linked to the Venezuelan or Cuban states: four vessels in this route appear to be operated and managed by Caroil Transport Marine Ltd,⁷⁵ and five vessels appear to be beneficially owned by PDVSA and operated by PDV Marina SA.⁷⁶ The fact that these ships reportedly continue to ply the Venezuela-Cuba route indicates PDVSA's and Caroil's apparent resistance to U.S. sanctions, perhaps due to the nature of the political and economic relations between Venezuela and Cuba as well as their existence outside of U.S.-dollar financial systems.

Case Study: Petion (IMO 9295098)

The *Petion* (IMO 9295098), is an oil products tanker whose AIS data did not indicate an overt port call in Cuba in May 2019. In that same month, however, the vessel exhibited dark activity in Cuban waters, during which time it likely visited a Cuban port. This case illustrates the importance of the Cuban route, as well as the ways that networks have attempted to obscure their identities and continue to make shipments of oil despite sanctions.

The Path of the Petion

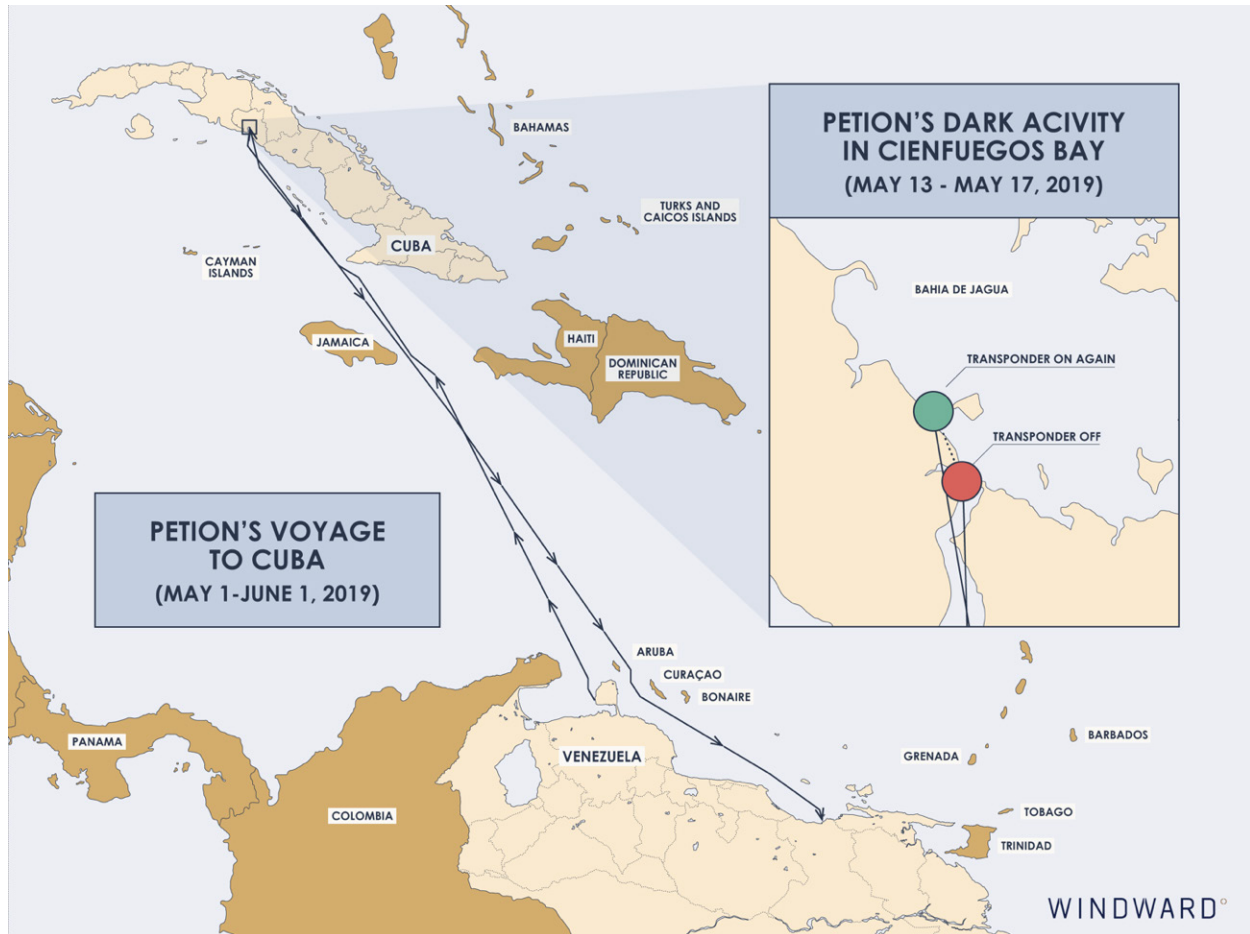
On May 1, 2019, Windward data indicated that the *Petion* made a port call at Amuay Bay, Venezuela, near the Amuay refinery. After spending approximately four days at Amuay Bay and reporting an increase in draft, indicating an increase of the ship's weight, the *Petion* traveled towards Cuba. Its last recorded position was in Cienfuegos Bay, just out of sight of Cuba's port at Cienfuegos. Once in Cienfuegos Bay, the *Petion* lost AIS transmission for approximately four days from May 13 through May 17, 2019 before returning to Venezuela near Puerto La Cruz. On May 18, 2019, on its voyage back to Venezuela, the *Petion* reported a decrease in draft, indicating that it offloaded cargo (likely oil or chemical products) at some point during its voyage, potentially in Cuba. In September 2019, the *Petion* was designated by OFAC for transporting oil and petroleum products to Cuba from Venezuela.⁷⁷

⁷⁵ At time of writing, Caroil Transport Marine Ltd operated and managed the *Esperanza* (IMO 9289166), the *Petion* (IMO 9295098), the *Sandino* (IMO 9441178), and the *Carlota C* (IMO 9502453), according to IHS Markit. A fifth vessel, the *Pastorita* (IMO 9034729), was formerly operated and managed by Caroil Transport Marine Ltd, however, as of 2020, the vessel's operator and manager are unknown, according to IHS Markit.

⁷⁶ According to IHS Markit at time of writing, PDVSA is the group owner and PDV Marina SA is the manager and operator of the *Icaro* (IMO 9038842), the *Manuela Saenz* (IMO 9117492), the *Yare* (IMO 9543500), the *Paramaconi* (IMO 9543512), and the *Terepaima* (IMO 9552496).

⁷⁷ Treasury Further Targets Entities and Vessels Moving Venezuelan Oil to Cuba. (2019, September 24). U.S. Department of the Treasury. Retrieved from: <https://home.treasury.gov/news/press-releases/sm784>

Figure 10: *Petion's* Voyage from Venezuela to Cuba in May 2019



The Network

According to IHS Markit data, the *Petion's* registered owner is Trocana World Inc, a Panama-registered company that has appeared in PDVSA financial reports as a subsidiary.⁷⁸ The *Petion's* operator and manager is reported to be Caroil Transport Marine Ltd, a Cyprus-registered company.⁷⁹ Guillermo Faustino Rodriguez Lopez-Calleja, whose brother leads Cuba's Grupo de Administración Empresarial S.A. (or GAESA, the country's military business conglomerate) reportedly directs both Trocana World Inc. and Caroil, which could indicate a link between the shipping company and the Cuban state.⁸⁰ ⁸¹ According to IHS Markit, Caroil Transport Marine Ltd manages five other vessels, four of which have also made Venezuela-Cuba voyages since sanctions: the *Carlota C* (IMO 9502453), the *Esperanza* (IMO 9289166), the *Gloria C* (IMO

⁷⁸ Petróleos de Venezuela, S.A. and Subsidiaries (PDVSA): Consolidated Financial Statements. (2016, December 31). Retrieved from: http://www.pdvsa.com/images/pdf/estado_financiero/pdvsa_ef_ingles_16.pdf

⁷⁹ Fernández, M. and Díaz Espí, P. (2019, March 15). Nepotismo y 'actividades oscuras': el petróleo entre Cuba y Venezuela. Diario de Cuba. Retrieved from: https://diariodecuba.com/cuba/1552651454_45163.html

⁸⁰ Fernández, M. and Díaz Espí, P. (2019, March 15). Nepotismo y 'actividades oscuras': el petróleo entre Cuba y Venezuela. Diario de Cuba. Retrieved from: https://diariodecuba.com/cuba/1552651454_45163.html

⁸¹ Gámez Torres, M. (2016, June 7). Panama Papers show Cuba used offshore firms to thwart embargo. Miami Herald. Retrieved from: <https://www.miamiherald.com/news/nation-world/world/americas/cuba/article82214612.html>

9540273),⁸² the *Pastorita* (IMO 9034729), and the *Sandino* (IMO 9441178). Caroil Transport Marine Ltd was designated by OFAC on September 24, 2019 and vessels operated by the company have continued to travel between Venezuela and Cuba since then.

⁸² According to AIS data, Gloria C has not made any Venezuela-Cuba voyages in the year after sanctions.

SECTION 3:

NEW COMPANIES AND VESSELS

The January 2019 designation of PDVSA created risk for any entities that continued or began their involvement in the Venezuelan oil sector. In the year after sanctions, many shipping companies and their vessels stopped transporting Venezuelan oil, while over 100 vessels visited Venezuelan ports for the first time. These vessels and their associated companies appear to have filled a gap in shipping activity left by networks that withdrew from business in the Venezuelan oil sector following the expansion of E.O. 13850 and the subsequent targeting of PDVSA.

In the year after sanctions, 214 tanker vessels made port calls in Venezuela that had not done so in the year prior to sanctions. Those 214 vessels were responsible for 33 percent of the port calls made in Venezuela in that year. Out of the 214 vessels, 103 (or 48 percent) visited Venezuelan waters for the first time.⁸³ These 103 tanker vessels appear to be beneficially owned by only 41 companies: three with the largest fleets are those belonging to TMS Tankers Limited, Eastern Mediterranean Maritime Limited, and Delta Tankers Limited.⁸⁴

Case Study: Eastern Mediterranean Maritime Ltd

After January 2019, according to Windward data, an influx of ships began appearing in Venezuelan oil ports. Some visited Venezuelan ports for the first time in years, and others for the first time ever. According to IHS Markit data, twenty of these were owned by Eastern Mediterranean Maritime Ltd (EastMed). According to IHS Markit, EastMed is a Liechtenstein-registered shipping company located in Greece that beneficially owns and manages 81 vessels, 36 of which are tankers, through intermediary corporate entities. Of this fleet, 20 vessels visited Venezuelan ports after OFAC sanctioned PDVSA, and 16 of these visited for the first time, according to Windward's AIS data. The registered owners of these ships as reported by IHS Markit are listed in the figure on page 28. Of the 20 tanker vessels owned by EastMed that operated in Venezuelan waters, 18 of them showed periods of lost AIS transmission as they crossed the Atlantic Ocean.

At least one company chartering EastMed-owned ships was at one point reportedly involved in oil trade with Venezuela. The *Abliani* (IMO 9693068), an oil products tanker, appeared in Venezuelan waters for the first time on March 28, 2019, two months after OFAC sanctioned PDVSA. Rosneft had reportedly chartered the EastMed-owned ship to transport oil products to Venezuela.⁸⁵

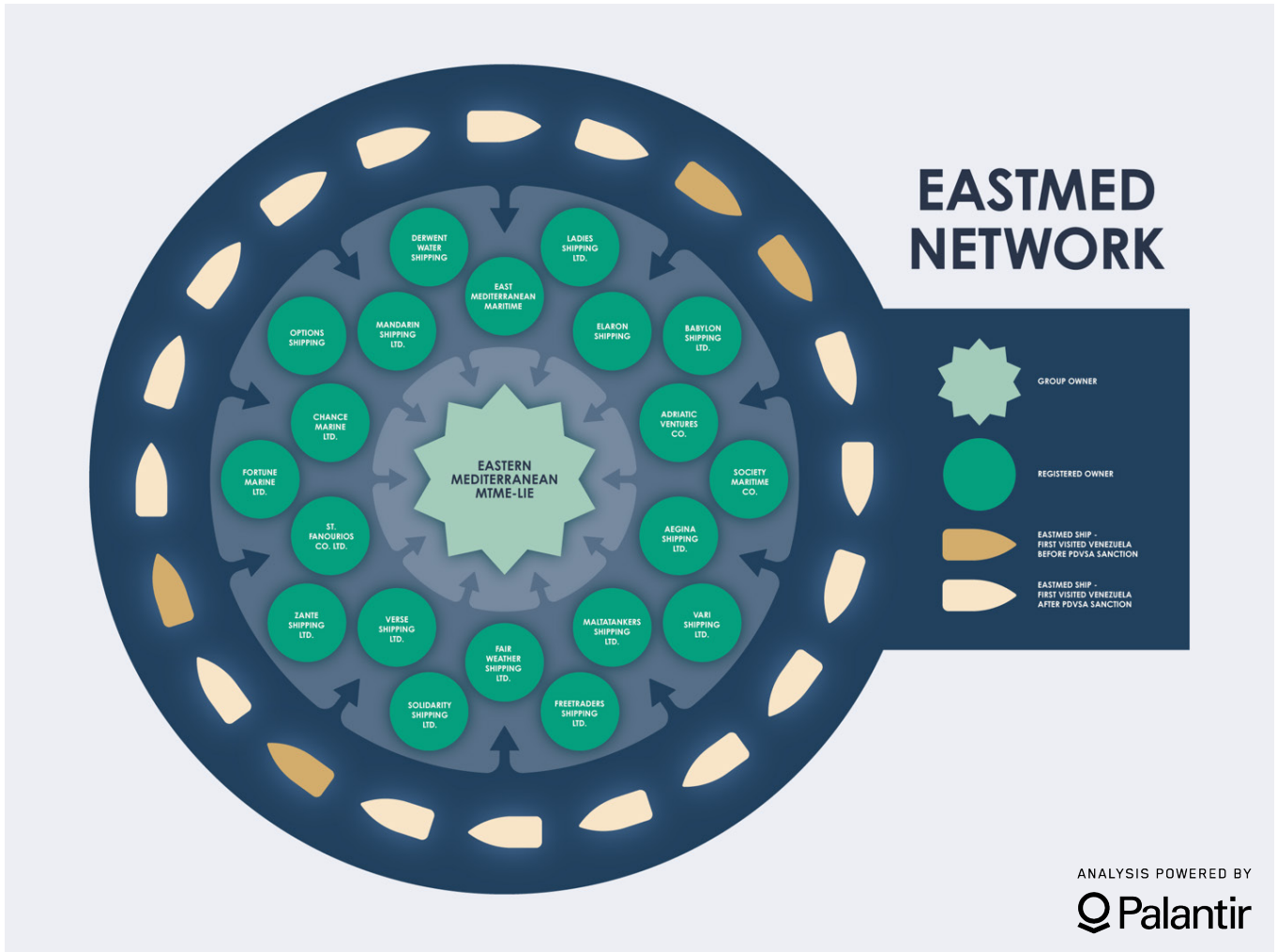
⁸³ In the year before sanctions, 141 vessels visited Venezuelan waters for the first time, representing 24 percent of vessels in our dataset that visited Venezuelan waters exclusively in the year before sanctions.

⁸⁴ Over 60 percent of vessels that appeared in Venezuelan waters for the first time in the year after PDVSA was sanctioned are group-owned by companies located in Greece. Greek-based group owners were also significantly represented in the pre-sanctions vessel data (23 percent of group owners were based in Greece).

⁸⁵ Tanker owners command premiums to supply Venezuela. (2019, March 6). ArgusMedia. Retrieved from: <https://www.argusmedia.com/en/news/1860952-tanker-owners-command-premiums-to-supply-venezuela>

In this case, as many shipping companies appeared to reduce or withdraw entirely from the Venezuelan oil sector, vessel voyage data appear to indicate that EastMed has engaged more frequently in the Venezuelan oil market.

Figure 11: Ships Beneficially Owned by EastMed



CONCLUSION

In recent years the United States, and to a lesser degree the European Union and several Latin American countries, have applied an ever-expanding set of sanctions and prohibitions on Venezuela in the hopes of bringing about a democratic transition and free and fair elections. In January 2019, this patchwork of sanctions expanded to cover PDVSA, the cornerstone of the Venezuelan economy. Yet the Maduro regime has endured, despite the fact that OFAC has blocked key export sectors, the Venezuelan financial sector, and members of senior leadership due to allegations of corruption, drug trafficking, and human rights abuses.

C4ADS's analysis of the effects of sanctions on the Venezuelan oil transport sector reveals trends in the overall level of shipping activity, the apparent destinations of Venezuelan exports, and the intermediary logisticians that transport oil and petroleum products to and from Venezuela. These findings can inform U.S. and foreign enforcement bodies, industry stakeholders including maritime insurers, and civil society monitors seeking to better understand or investigate Venezuelan oil exports and maritime activity in a global sanctions evasion context.

On a broader level, this report illustrates how publicly available information can shed light on the empirical effects of U.S. sanctions—as well as the techniques through which these sanctions can be thwarted. While E.O. 13850 succeeded in reducing the aggregate volume of recorded port calls in Venezuela, persistent dark voyage activity, the continued importance of particular routes, and the entry of new players showed the limits of enforcement. As shipments to the United States sharply declined in the year after sanctions, tanker vessels continued making voyages to China, India, and Cuba. In part this is due to the entrance of new players willing to brave U.S. sanctions to facilitate Venezuelan oil sales. Trade in China and India in particular has been facilitated in part by Rosneft as an intermediary.

Beyond E.O. 13850, the COVID-19 pandemic and concurrent drops in global oil demand have dealt another blow to Venezuela's oil industry. While continued analysis of maritime trends can bring visibility to Venezuela's external engagement, other factors, such as imminent changes in PDVSA's management, are on the horizon.⁸⁶ In this context, continued analysis of PAI will continue to inform analysis on Venezuela's engagement with international actors in the face of disruption.

⁸⁶ Singer, F. (2020, April 28). El dirigente chavista acusado de narcotráfico que acumula poder en el Gobierno de Maduro. El País. Retrieved from: <https://elpais.com/internacional/2020-04-28/el-dirigente-chavista-acusado-de-narcotrafico-que-acumula-poder-en-el-gobierno-de-maduro.html>