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Is the Trade Finance and Supply Chain Industry Equipped to Manage Sanctions Screening for Military and Dual-Use Technologies?

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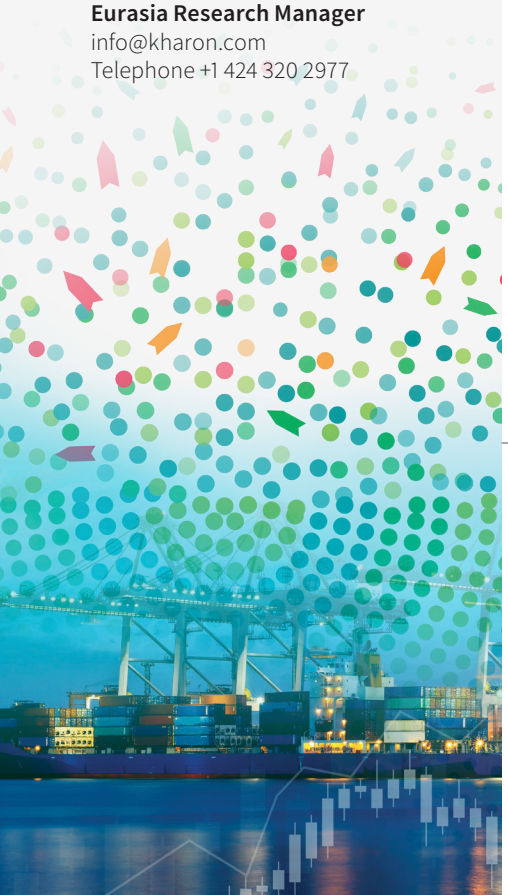

Is the Trade Finance and Supply Chain Industry Equipped to Manage Sanctions Screening for Military and Dual-Use Technologies?

Executive Summary

Industry continues to grapple with finding a balance between the expanding market opportunities to conduct global trade in military and dual-use goods while ensuring compliance with the export controls that apply to them. A number of international agreements obligate participating states to establish export controls for these items, in addition to nuclear goods and technologies, biological and chemical weapons, missile components and other strategic technologies.

The regulation of the trade in military and dual-use goods is critical for helping prevent the proliferation of WMD, civil conflict, terrorist attacks and human rights abuses. In the wrong hands, these goods could contribute to regional instability and devastating fatalities. Illicit actors frequently attempt to exploit formal commerce and the global financial system in their efforts to procure military and dual-use goods. Some of these actors may be members or supporters of the illicit networks they are facilitating, while others may seek to profit from the acquisition and resale of military and dual-use goods to these networks.

As the largest exporter of weapons and dual-use technologies in the world, the United States (U.S.) in particular has developed a robust regulatory and enforcement regime to help prevent these items from being sold or diverted to sanctioned jurisdictions, terrorist groups, proliferators or other parties of concern. The European Union (EU) has also notably expanded its export control regime, in line with a global recognition that smarter, safer trade enhances security.

In addition to the export control regimes put in place at the national, regional and international level, there is an increasing focus on the responsibility of private sector institutions to act as a first line of defense against illicit diversion efforts that intersect with legitimate commerce.

(to be continued on next page)

Executive Summary

Corporates involved in trade, logistics, financial services and other industries are increasingly on the front line of combating supply chain diversion threats through screening and due diligence, yet no consensus has been reached on a comprehensive framework for managing compliance challenges specifically related to weapons and dual-use transfers. In addition, the lack of an integrated database covering state and international restrictions on relevant items further complicates the ability to conduct enhanced screening thoroughly and efficiently. Identifying the nature or intended application of a dual-use item is particularly challenging, especially when goods descriptions on trade documents are vague or lacking in detail.

Despite these challenges, numerous advisories and guidelines issued by regulators can help guide industry best practices related to military and dual-use compliance. These practices include verifying whether firms are sanctioned, majority owned or controlled by sanctioned parties, or part of a military structure, as well as reviewing transactions for indicators of risk related to particular product end uses.

Analyzing customs and other data in conjunction with network analysis of the parties involved in the trade reveals a number of insights as to common screening hurdles, red flags and diversion typologies for industry to be on watch for. These include:

- The use of brand names, generic terms or words with dual meanings in goods descriptions, rather than the wording that appears in official regulatory lists, can generate false positives and create complexities in determining whether a particular good is intended to have a military or civilian application.
- The details of a particular transaction on paper cannot be accepted at face value or considered in isolation.
- A comprehensive review of a firm's supply chain may reveal suppliers or distributors that source from or resell to sanctioned actors or prohibited jurisdictions, raising the risk of product diversion to a military end user or for military end use. In other situations, firms may employ the use of front companies to serve as consignees on trade records to mask the true recipient of goods or attempt to ship goods to ports in or near prohibited jurisdictions that are known or suspected hubs for illicit transshipments.

The ever-evolving risks of conducting trade in military and dual-use goods calls for a rethink of traditional compliance practices. A new trade compliance framework for practitioners, with a view toward strengthening and simplifying operations by enhancing the quality of data and intelligence available for screening, entails dynamic technology and data-driven solutions that can adapt in line with changes to regulatory requirements.

As regulators increasingly expect industry to conduct holistic analysis of commercial transactions, enriched data that enables institutions to efficiently identify and reconcile opaque military and dual-use trade against an extensive dataset of illicit networks in global supply chains is needed. When combined with the application of machine learning to refine and improve screening results, the integration of this type of analyst-augmented technology solution into an institution's export controls and sanctions compliance program would create efficiencies and increase confidence in operational decision-making.

About IHS Markit

IHS Markit's in-depth data, analysis and news enables customers around the world to address challenges – including market volatility, regulatory changes and global risks – while developing new opportunities and remaining competitive. Customers rely on IHS Markit Maritime & Trade to make mission-critical decisions that support supply-chain, logistics, compliance, defense, procurement and commercial strategies. IHS Markit's unsurpassed capabilities provide a real-time source for ship movements combined with trade and commodity data to help organizations and governments prepare for the future, ensure regulatory compliance and secure oceans and ports from security threats.

About Kharon

Kharon is a leading provider of research and data analytics, focused on global security threats and other controversies that impact global commerce and finance. Kharon's clients include first tier international financial institutions, global corporates, public sector entities and professional services firms.
Kharon empowers organizations and practitioners that tackle complex risk management for financial crimes, trade and export compliance, as well as business and reputational risk. Our integrated solutions are designed to merge seamlessly with screening and analytics environments, due diligence and investigative functions, and training requirements. Kharon facilitates effective risk-based decision-making by making complex information accessible and actionable.

Acknowledgments

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Introduction

Nation-states have sought to foster trading markets in arms and weapons as a means to protect and serve geopolitical ambitions while allowing corporates to innovate, design and transfer products and technologies around the world. Equally, states have applied a formal structure of export control guidelines on weapons and military trading to ensure that armed conflicts and adversarial tensions are not exacerbated. Industry is often at the sharp end of implementing and managing compliance procedures so that banks, insurers, freight forwarders, cargo operators and shippers do not transport proscribed military and dual-use goods to users or locations, while also being able to benefit from trading these items.

This dichotomy is fairly self-evident in 2020 and to some extent more widespread. Recent news stories have highlighted the willingness of the U.S. and other countries to expand their lists of potential military products available for trade.[1] At the same time, new restrictions regarding to whom and where these goods can be shipped have also changed and become more complex. One of the most significant export compliance stories of 2020 concerned the U.S. Bureau of Industry & Security (BIS) regulations that took effect in June, which expanded the definition of military end use to cover a wider array of technologies with potential military application and imposed new restrictions on exports to military end users in China. The regulation added to the existing restrictions in place since 2014 on Russia and Venezuela.[2] Much has been made of China's civil-military integration and how products and technology used for civil economic purposes are also an integral part of the country's military-industrial sector. This focus has also extended to the publication of a U.S. Department of Defense list of companies considered to be owned or controlled by the Chinese military, which the Department updates periodically.[3]

Since the publication of the new U.S. BIS regulations on China, there has been discussion of a loosening of certain restricted goods and technology within the military space by the U.S. Prior to the 2020 presidential election outcome, Trump administration officials were discussing the relaxation of export rules for the sale of unmanned military vehicles as an opportunity to harness new markets for the technology.[4] The U.S. has been the biggest global exporter of arms and weapons over the last 10 years, with 2019 marking a high point for exports over the last decade, according to Global Trade Atlas customs data.[5] The U.S. has also been the most active regulator and enforcement authority regarding export compliance for military items. In the current climate, with arms trading at a global high point and stringent regulation to ensure military items are not shipped to sanctioned countries or entities, defense items are more likely to appear in trade documents, invoices, packing lists and bills of lading.

The trade, logistics and financial services industries face a great challenge to ensure that military and dual-use items are legitimate, are intended for legal entities, are shipped to non-sanctioned countries and have the appropriate export licenses. To date, there has been no overall consensus on managing the compliance screening challenges of military and dual-use goods from a trade and supply chain perspective, including, for example, the particular datasets required to integrate screening checks as part of a foundational framework. Current advisories and guidelines have amalgamated military goods screening with dual-use goods, which, while relevant, tends to overshadow military goods recognition. In general, military items can be easier to identify via the screening process with some exceptions for specialized items or in situations where military articles are also referenced on a dual-use list.

1. https://www.defensenews.com/smr/defense-news-conference/2019/09/04/us-ratchets-up-focus-on-incentivizing-arms-exports-to-allies/
2. https://www.federalregister.gov/documents/2020/04/28/2020-07241/expansion-of-export-reexport-and-transfer-in-country-controls-for-military-end-use-or-military-end
3. https://www.defense.gov/Newsroom/Releases/Release/Article/2328894/dod-releases-list-of-additional-companies-in-accordance-with-section-1237-of-fy/
4. https://www.state.gov/u-s-policy-on-the-export-of-unmanned-aerial-systems-2/
5. Source: IHS Markit Global Trade Atlas

Dual-use goods frequently pose screening challenges due to the multiple designs or material properties of a particular item. For example, the many different properties and uses of aluminum can lead to vague goods descriptions on trade documents, offering little insight as to its end use, whether it be in the nuclear industry or in bicycle manufacturing. On the other hand, military items have a very distinct end use; the identification of a weapon or armored vehicle is enough to raise a compliance red flag, potentially making the screening identification process easier if a definitive list of military goods is in place.

To illustrate the need for suitable military and dual-use goods identification tools and procedures, this paper will examine the current operational processes used within the trade finance, financial services and logistics industries in the broader context of global trade patterns in military and dual-use items. To do so, the Global Trade Atlas (GTA) of reported customs data and the Port Import Export Reporting Service (PIERS) for the U.S. will be used to highlight country trading patterns, trade frequency, the nature of exported and imported goods and how goods are often described in trade documents.[6] Portions of the GTA and PIERS data have been integrated with Kharon's commercial network analysis of more than 8,000 actors sanctioned by the United Nations, U.S. and EU. This holistic dataset can provide a potential framework for trade compliance practitioners to formulate due diligence checks to ensure a greater degree of certainty when faced with potentially obscure or vague goods descriptions that may hide military and dual-use products.

Background to Dual-Use and Export Control Regulatory Frameworks

Weapons and dual-use products and goods are regulated from a compliance perspective via control lists adopted by international arms control bodies. Countries that are signatories to the Wassenaar Arrangement, Australia Group, Missile Technology Control Regime, Nuclear Suppliers Group and other conventions have adopted dual-use goods and military lists to consolidate the types of products that fall under licensed or restricted trade. Dual-use and military lists are currently published by the EU, the U.S. Bureau of Industry and Security, Japan's Ministry of Economics, Trade and Industry, the UAE's Committee for Goods and Material Subjected to Import and Export Control and many others.

Many of these national dual-use technology lists have a degree of overlap as they are grounded in international conventions like the Wassenaar Arrangement. Equally, there are differences between certain lists. The U.S. Commerce Control List, when compared with its EU counterpart, contains a small set of products that are unique to its export classification schema. For example, the U.S. restriction on harbor entry detection devices is not specifically included within other export control lists.

U.S.

There are two major U.S. agency regulations to consider when evaluating whether an item is export-controlled: the U.S. Department of State's International Traffic in Arms Regulations (ITAR), and the U.S. Department of Commerce's Export Administration Regulations (EAR). While the ITAR regulates the export of military products, the EAR regulates the export of dual-use goods. Dual-use goods are those that have both commercial and military or proliferation applications.

The U.S. Department of State's Directorate of Defense Trade Controls (DDTC) is responsible for the export and temporary import of defense articles and services governed by the Arms Export Control Act (AECA), which is implemented by the ITAR. The ITAR contains a list of defense products known as the United States Munitions List (USML). Examples of items on the USML include, but are not limited to, firearms, ballistic missiles, explosives, military electronics, and chemical and biological agents.

6. Global Trade Atlas (GTA) and Port Import Export Reporting Service (PIERS) are IHS Markit Maritime and Trade data solutions

The U.S. Department of Commerce's Bureau of Industry and Security (BIS) is responsible for the enforcement of the EAR, which includes the Commerce Control List (CCL) of dual-use items.

BIS recently announced new regulations regarding export compliance with China.[7] The new rules went into effect on June 29, 2020, and will subject many products and technologies to new licensing requirements in accordance with military usage and military end users. The new measures cover a wide range of products, goods and commodities that could support or contribute to military usage and users.

The affected items are found on the U.S. Commerce Control List (CCL) under a list of Export Control Classification Numbers (ECCN). Some of the goods impacted include:

- **Materials Processing** – [ECCN 2A290, 2A291, 2B999, 2D290] Specific items relating to the nuclear industry such as heat exchangers, instrumentation control systems, snubbers, radiation detectors, radioactive material casks, etc.
- **Electronics** – [ECCN 3A991, 3A992, 3A999, 3B991, 3B992, 3C992, 3D991] Semiconductor lithography, pulse amplifiers, spectrometers, oscilloscopes, etc.
- **Telecoms & IT** – [ECCN 5B991, 5A992, 5D992] Test equipment used in the telecoms industry and forms of encryption software
- **Sensors & Lasers** – [ECCN 6A991, 6A996] Acoustic equipment that locates objects or features and various electromagnetic sensors
- **Marine** – [ECCN 8A992] A broad range of underwater cameras, light systems and television sets, marine engines used for submarines, scuba gear, breathing apparatuses, inflatable boats, wetsuits, air filtration units, compressors, etc.
- **Aerospace** – [ECCN 9B990] Gas turbine engines used for aircraft

Any organization involved in the export, re-export or transfer of items subject to U.S. EAR in the abovementioned ECCN categories to China needs to account for this new rule.

EU

The EU has moved aggressively to update and expand its regulations and guidance regarding trade in weapons and dual-use items. The EU's export control regime for dual-use items is governed through Regulation (EC) No 428/2009, which establishes common rules and control measures for all member states. The regulation includes a list of products and descriptions that implements internationally agreed upon dual-use controls. Within the EU, dual-use items may be transferred freely, with the exception of certain sensitive items requiring prior authorization.

In November, the EU announced that an agreement was reached on establishing new rules to make the trade of dual-use items more accountable, competitive and transparent. The agreement marks a major modernization of the EU's export control regime.

7. https://www.federalregister.gov/documents/2020/04/28/2020-07241/expansion-of-export-reexport-and-transfer-in-country-controls-for-military-end-use-or-military-end

The rules will aim to strike a balance between ensuring the EU's competitiveness in modern trade, while still ensuring security and promoting human rights. The EU noted that the control of certain technologies that can be misused in connection with human rights violations will be emphasized, particularly items used for cyber-surveillance. The agreement also aims to provide additional ways for EU member states to cooperate on export controls through the use of transmissible controls. This provision will allow a member state to introduce export controls on the basis of legislation established by another member state in certain cases.

China

Other jurisdictions with large weapons and dual-use manufacturing sectors are also taking steps to deepen trade controls. For example, China's Export Control Law came into force on Dec. 1, 2020. In line with other national dual-use and military goods lists, the Chinese variant seeks to prevent the proliferation of weapons of mass destruction, safeguard national security and prevent the export of sensitive goods, products, technology and services across the nuclear, chemical and military sectors. The export control law puts into effect a unified control system, including an item list, exports that are prohibited and a set of importers and end users subject to restrictions and controls.

Industry Guidelines

Trade Control Compliance Programs

The EU and U.S. have each promulgated guidance in recent years to establish the core elements of an effective trade control compliance program. The recommendations in the EU and U.S. guidance largely mirror one another.

In its recommendations published last year, the EU identified the critical elements of a trade control compliance program as:

1. Top-level management commitment to compliance

2. Organization structure, responsibilities and resources

3. Training and awareness raising

4. Transaction screening process and procedures

5. Performance review, audits, reporting and corrective actions

6. Recordkeeping and documentation

7. Physical and information security.

The EU details regulatory expectations and steps required to satisfy those obligations. In particular, the guidance focuses on various scenarios and red flag indicators for transaction screening processes and procedures that should be addressed by industry.

Steps for screening best practices include:

- **Item classification:** Determine whether a good, software or technology is subject to a weapons or dual-use control list. Compare technical specifications and product descriptions against control lists;
- **Transaction risk assessment:** Ensure that none of the involved parties (intermediaries, purchaser, consignee or end-user) are subject to sanctions. Consult U.S., EU and U.N. sanctions lists and also confirm the parties are not majority owned or controlled. The U.S. and EU 50% rules impose strict liability on firms that do business with entities majority owned by sanctioned parties, even though the subsidiary companies do not appear on a sanctions list;
- **Stated end use and involved parties screening:** Know your customers and verify whether they operate or are owned or controlled by organizations situated within a military structure. Know and verify their end use of your products;
- **Diversion risk screening:** Evaluate the transaction for diversion red flag indicators relating to the product, end use and end user, shipment, and financing conditions;
- **"Catch-all controls":** Have procedures in place to identify information that non-listed products may be purchased for military end use by a firm in a country subject to an arms embargo. Implement reporting requirements to escalate such concerns.

The EU's guidance from last year also includes a number of red flag indicators of possible military end use diversion activities. The guidance is derived, in part, from the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies.

Possible Red Flag Indicators

Product

- Is the product technically superior or does it have a known dual-use, military or sensitive application?
- Has the customer requested unusual modifications of the product?

End User and End Use

- Is it difficult to find information on the customer in open sources or has the customer provided inadequate responses to your sales staff?
- Is the stated end user a trading company, distributor or based in a free trade zone?
- Are the products relevant to the customer's stated commercial operations?
- Is the customer's contact information directed to a third party in another country?

Shipment

- Is the requested shipping route unusual?
- Is the consignee or notify party handled by a party other than the stated customer or intermediaries?

Finance and Contract Conditions

- Is the customer offering unusual or unreasonably profitable payment terms?
- Does the payment originate from a country other than the product destination?
- Does the customer have unusual requirements for confidentiality about final destinations, customers or product specifications?

Finally, the EU and U.S. have recently expanded requirements for managing weapons and dual-use compliance to include verification requirements regarding the human rights situation in the country of destination to ensure that the products could not be used for internal repression.

Other regulators have issued advice on screening dual-use and military items. The Monetary Authority of Singapore, Hong Kong Association of Banks and the United Kingdom Financial Conduct Authority have all highlighted the need to perform military goods and dual-use screening while acknowledging the difficulties in doing so from an operational perspective. The Monetary Authority of Singapore requires operational staff to be able to identify potential dual-use goods through reference to public sources of information such as customs control lists and the EU's TARIC code database.[8]

Counterproliferation Advisories

Regulators and international standard-setting bodies such as the Financial Action Task Force (FATF) have also issued a growing body of advisories regarding sanctions and proliferation tactics carried out by illicit networks and best practices for identifying and counteracting these activities.

Financial Action Task Force

FATF has highlighted the need for export controls for military and dual-use items, but also noted the difficulties in determining whether goods classify as dual-use, due to a lack of detailed product information in trade documents and the need for highly specialized technical knowledge. As procurement networks have become larger and more complex with the introduction of intermediaries along the supply chain, FATF has highlighted a shift from illicit actors attempting to acquire "whole manufactured systems" to individual component parts, which present more difficulties in determining whether they are destined for military or civilian end use.[9]

Suppliers and financial institutions also tend to know less about the ultimate end user of a product, often having information only on brokers or other intermediaries with whom they are conducting business directly, in comparison to entities indirectly involved within the larger procurement chain.

In a 2018 report, FATF noted a number of red flag indicators of possible proliferation financing to be aware of during the due diligence process, such as whether transactions involve jurisdictions of concern, whether shipments correspond to regular geographic trade patterns and whether goods being shipped align with the technological expertise and industries of the destination country.[10]

8. https://www.mas.gov.sg/-/media/MAS/News-and-Publications/Monographs-and-Information-Papers/Guidance-on-AML-CFT-Controls-in-Trade-Finance-and-Correspondent-Banking.pdf
9. https://www.fatf-gafi.org/media/fatf/documents/reports/Typologies%20Report%20on%20Proliferation%20Financing.pdf
10. http://www.fatf-gafi.org/media/fatf/documents/reports/Guidance-Countering-Proliferation-Financing.pdf

North Korea

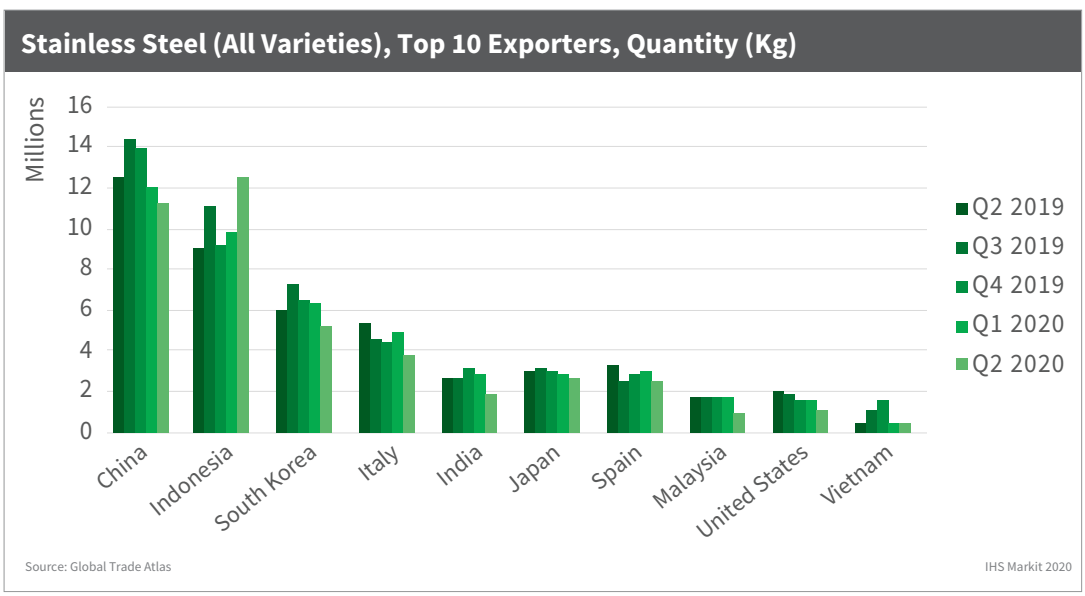
Regarding recent regulatory guidance on counterproliferation efforts, a U.S. advisory on North Korean ballistic missile procurement was issued in September 2020.[11] The advisory explained how North Korean ballistic missile procurement activities expose the electronics, chemical and metals industries, as well as the financial, transportation and logistics sectors, to potential U.S. and U.N. sanctions violations.

According to the advisory, it is "critical" for private sector companies and individuals to be aware of the items sought by North Korea, the tactics Pyongyang uses to obtain them, and the potential consequences they face if they are found to be engaging in conduct subject to sanctions authorities. The advisory emphasized that industry is "on the front line" of identifying and preventing North Korea's procurement attempts, and urged vigilance regarding the transfer of sensitive technology, particularly through third parties that might attempt to conceal their ties to North Korea.

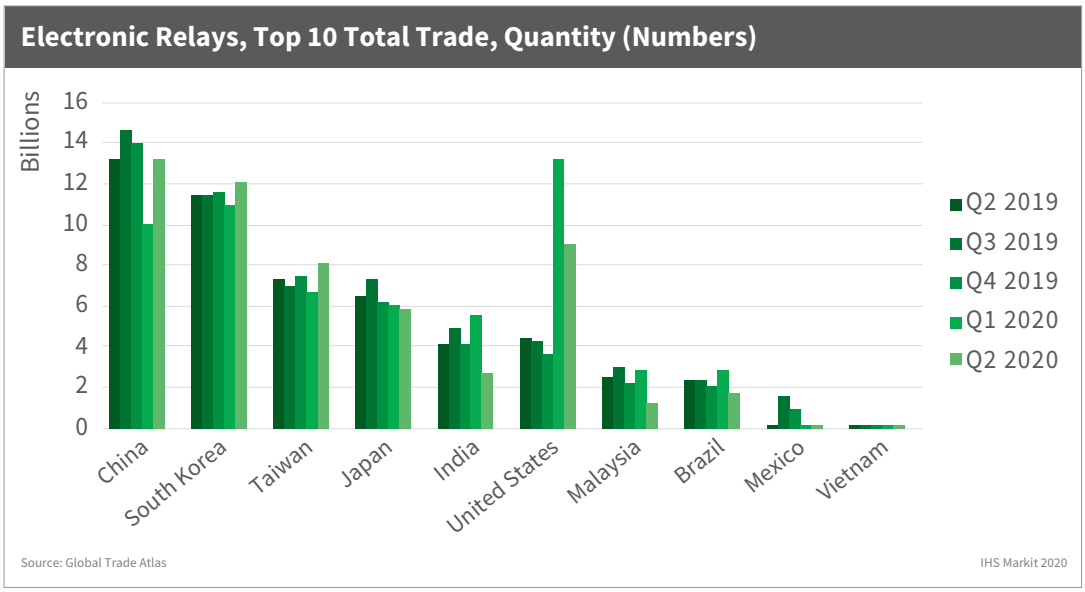
The advisory also included a 10-page annex of specific items used by the North Korean missile program and listed some key entities involved in North Korean missile procurement, as well as the methods Pyongyang has used to obtain sensitive items. The advisory noted that companies abroad may collaborate with North Korea to supply foreign-sourced basic commercial components, concealing from manufacturers and distributors that North Korean entities are the true end users.

The advisory highlighted that many items do not meet the thresholds of U.N. or national export control lists and are widely available from overseas distributors. Companies should therefore comply with "catch-all controls" requiring a national authorization to export an item if there is any risk of WMD-related end use, or if the end user is involved in, or suspected of, WMD development, the advisory said.

The advisory goes on to list electronic relays and specialist types of stainless steel as high-risk items. Customs trade data shows that a high proportion of stainless steel products and electronic relays are manufactured in East Asian markets, which could increase the likelihood of diversion to North Korean proliferation networks depending on the buyers and other facilitators active in these supply chains.



11. https://home.treasury.gov/system/files/126/20200901_nk_ballistic_missile_advisory.pdf



Maritime

In May 2020, the U.S. released guidance to provide actors in the maritime industry with information and tools to counter illicit shipping and sanctions evasion tactics.

The scope of the advisory was unprecedented in the number of commercial actors it addresses in the maritime industry - from financial institutions to commodity traders, brokers, freight forwarders and shipping firms. The advisory focused on deceptive practices and sanctions evasion tactics relating to high-risk geographies adjacent to embargoed jurisdictions such as North Korea, Iran and Syria.

In particular, the advisory highlighted best practices to identify potential sanctions evasion, to include monitoring ships throughout the entire transaction lifecycle, exercising supply chain due diligence on all vendors engaged in the maritime trade cycle, and sharing information with industry partners and colleagues.

Gaps Remain

The different advisories and guidelines from national and regional regulators that work alongside trade and supply chain companies have highlighted which actors and activities present heightened risk and how to identify indicators of risk, but there has been minimal guidance on how to implement specific data solutions for the screening of dual-use and military goods. A number of trade associations and governing bodies have put forward guidelines on an industry basis. The airline cargo association, the International Air Transport Association (IATA), released a working paper on export risk mitigation that expressed the need for airlines to be vigilant when screening dual-use and military items.[12] The International Federation of Freight Forwarders Associations (FIATA) has also noted the requirement for logistics companies to identify restricted or prohibited goods and to consult with clients to ensure the relevant licenses are in place for certain shipments.[13] In a similar vein, the International Chamber of Commerce (ICC) has produced a policy statement tailored to the banking industry detailing the pain points and challenges for financial institutions. This document states that many banks do not have the expertise or the correct information they would require when screening for goods with proliferation financing risk.[14]

12. https://www.iata.org/contentassets/2c4495c8abb64352acaef69b73d0b783/ccwg-tf-trade-sanctions-and-export-risk-mitigations.pdf
13. https://fiata.com/fileadmin/user_upload/documents/Position_Papers/Non_Proliferation_UN_1540_RESO_speech_21_11_2014.pdf
14. https://iccwbo.org/content/uploads/sites/3/2019/06/icc-policy-statement-how-does-global-trade-and-receivables-finance-mitigate.pdf

Recent Fines

In the last few years, multiple fines have been handed out to exporters, financial institutions, shippers and other parties in the supply chain for compliance deficiencies in trading dual-use and military goods.

Access USA Shipping
February 2017
$27M fine
Concealed true nature of items by altering descriptions ... "laser sights for firearms" as "tools and hardware," "rifle scopes" as "sporting goods."

Tajhiz Sanat Shayan
February 2019
$125,000 fine
Exported U.S.-origin military equipment to Iran ... "sonar equipment," "acoustic transducers," "lens for a missile tracking device."

AAE Chemie Trading/Anex Customs/Danmar Logistics
February 2019
€75,000-€500,000 fine
Shipped 168 tons of the chemical isopropanol, used to make sarin gas, to Syria over a two-year period.

ICM Components
March 2019
$200,000 fine
Exported U.S.-origin military equipment to Iran ... "aircraft parts," "precision pressure transducers," "emergency flotation systems kits," "shock mounted light assemblies."

Standard Chartered
April 2019
£102M fine
Failed "to collect sufficient information on a customer exporting a commercial product which could, potentially, have a military application."

Many of these enforcement actions highlight the broad nature of the goods involved. Fines attributed to AAE Chemie Trading, Anex Customs and Danmar Logistics in 2019 for shipping the chemical isopropanol is a particular example. Isopropanol is used in the manufacture of soaps and detergents, but also when combined with other chemical catalysts can form the basis of sarin.

Isopropanol is not directly referenced on the U.S. CCL or the EU dual-use goods list. One of the disconnects between a regulatory document such as the U.S. CCL that manages goods and commodities for export is a lack of product and brand names.

In 2020, the vessel operator Nordic Maritime was fined more than $31 million for transporting to and using in Iranian waters U.S.-origin maritime surveying equipment that did not have the prerequisite license.[15]

15. https://www.federalregister.gov/documents/2020/03/18/2020-05600/in-the-matters-of-nordic-maritime-pte-ltd-and-morten-innhaug-respondents-partial-remand-and-final

The enforcement action covered a specific entry on the CCL: Export Control Classification Number (ECCN) 6A001. This ECCN number covers the following description: "6A001: Acoustic systems, equipment and components." The CCL goes on to note the high-level product classifications that are categorized by this ECCN: acoustic devices, pingers, underwater survey equipment and hydrophones.

The enforcement notice issued by BIS to Nordic Maritime specified a shipment of "compass birds and streamer sections." However, in the U.S. CCL there is no direct mention of a compass bird or a streamer section in ECCN 6A001. This difference between the official regulatory list, which banks, shippers and others are expected to screen for compliance purposes, and the brand or product name for goods, highlights the disconnect between the regulatory language and industry jargon.

Operational Processes and Controls for Dual-Use and Military Items

In many screening scenarios, brand and product names are not captured in regulatory dual-use lists but are used in bill of lading goods descriptions. Specialized knowledge can be required by compliance teams in financial services, trading or shipping to understand highly technical items used in industries and sectors as varied as oceanographic, aerospace and semiconductor manufacturing.

Open account transactions are commonly used to conduct global trade, but rarely provide details related to the goods involved. Therefore, dual-use and military goods screening is more likely to occur in transactions involving documentary credit and letters of credit, where a goods description is available. Trade documents commonly found in a letter of credit can include goods descriptions on an airway bill, the SWIFT MT700 45A field or the original sales application or contract.

Additionally, the goods description in these documents does not require any standardized format. The author of the goods description can describe the product or item as they wish with no recourse to the use of product standards such as the Harmonized System Code (HS Code). In many examples, goods descriptions can range from the vague, such as "Aluminum Pipe," to the more detailed, such as "6060 Aluminum Alloy," with the latter being a likely variant of aluminum used in the dual-use application of cooling or heat sink sections.

To manage regulatory requirements, operations teams at cargo companies, banks and freight forwarders maintain a list that helps teams and organizations in their overall compliance procedures. The lists can either be an internal document that outlines danger words or phrases captured from past transactions or an off-the-shelf vendor application that utilizes a search lookup tool. In both cases, Google Search would be used as a backup for any difficult or obscure goods and items. Vendor applications generally work on the premise of a collated list of keywords and phrases, which if matched to a goods description will generate a red flag alert for the operator.

The weaknesses within these screening approaches have led many sanctions screening practitioners to question the effectiveness of dual-use and military checks. However, screening of "pure" military items including land vehicles, weapons, explosives and surveillance equipment, among others, can be more straightforward to recognize. From a military goods identification perspective, some of the complex challenges associated with dual-use technologies are not as prevalent. An AR15 weapon can only be described in a limited number of ways. The primary challenge is to ensure that an appropriate set of commercially available military items is known and available to document-checking staff when validating goods descriptions. Utilizing an industry-accepted list of military items can at least ease the challenges of the military identification process and present an opportunity to streamline and expedite the reconciliation of military items in the trade and payment screening process.

Evaluating dual-use and military items by organizations often requires navigating large volumes of documents and unclear goods descriptions. Therefore, operational screening staff are looking to make decisions based on the information that is available to them in a time-sensitive manner. Identifying military goods and items in this way, on trading documents, is difficult and time consuming. Any item raised as a red flag by a level one compliance checker needs to be escalated for further review with internal financial crime compliance departments. While this type of check takes place, transactions are put on hold and a further review of the data fields occurs before a decision on how to proceed is made. Yet, in many cases, items raised as potential red flags often fall into the false positive category.

Scale and Scope of Militarized Trade

The ongoing increase in exports of military items from the largest global economies highlights the importance of utilizing data to create efficiencies in the product screening process.

To bring this trend into focus, this paper has conducted an analysis of import and export bills of lading from multiple arms exporters over the last five years (2016-2020). The goods descriptions over this time period have been scanned and processed for military and dual-use items in the categories of arms, weapons, military vehicles and others through the use of an extensive dual-use and military goods list.

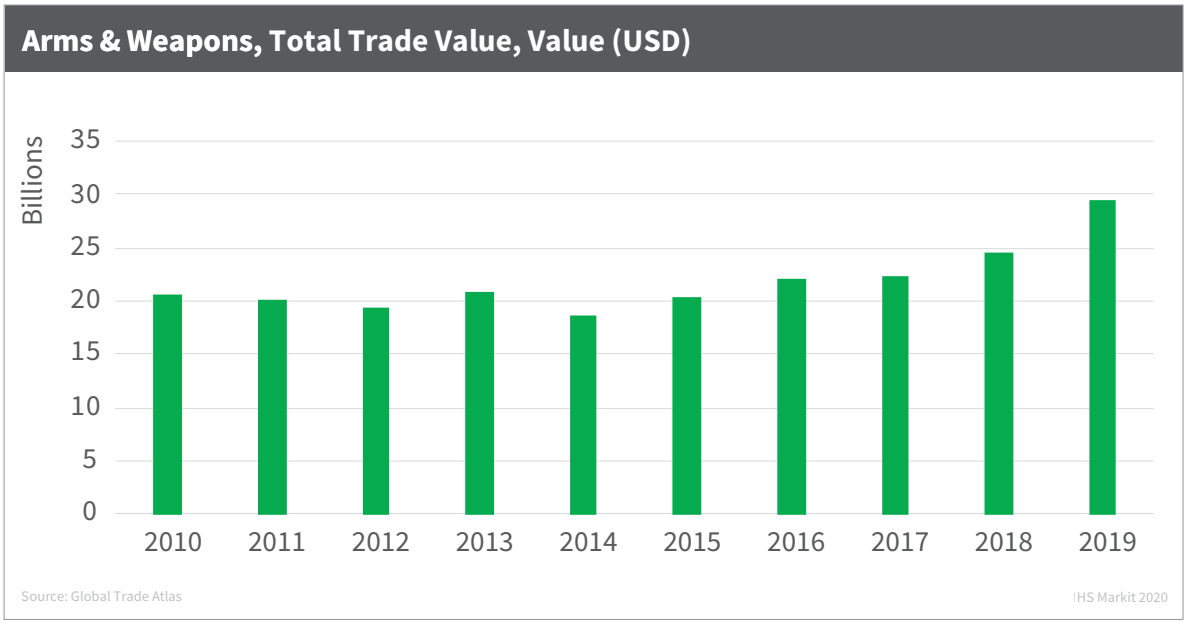
The study focuses primarily on published trade data of U.S. exports of military items, due to the fact that the customs agencies for many leading importers of military goods often do not publish transparent information on military items traded.[16] Saudi Arabia, for example, does not report a full set of numbers relating to its military imports.

The data analysis in this section concentrates on five military categories to demonstrate trade patterns of military items:

- HS Code – 9306: Bombs, Grenades, Torpedoes, Munitions
- HS Code – 9305: Parts & Accessories of Arms
- HS Code – 8710: Tanks & Armored Fighting Vehicles
- HS Code – 9301: Military Weapons (other than revolvers, pistols)
- HS Code – 9300: Arms & Ammunition

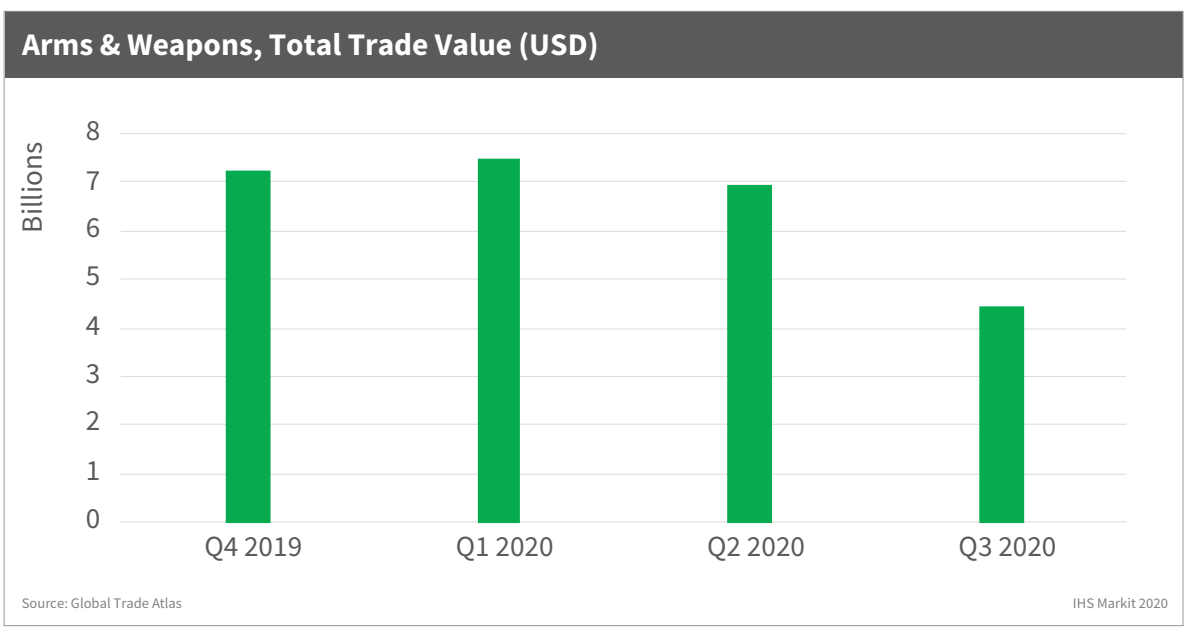
Using the above categories, 2019 witnessed the biggest year-on-year growth in military goods trade since the start of the decade and produced the biggest total trade figure for a single year since 2010.

16. It is important to note that customs data will likely understate the actual true figures for military trade, see https://www.sipri.org/databases/milex

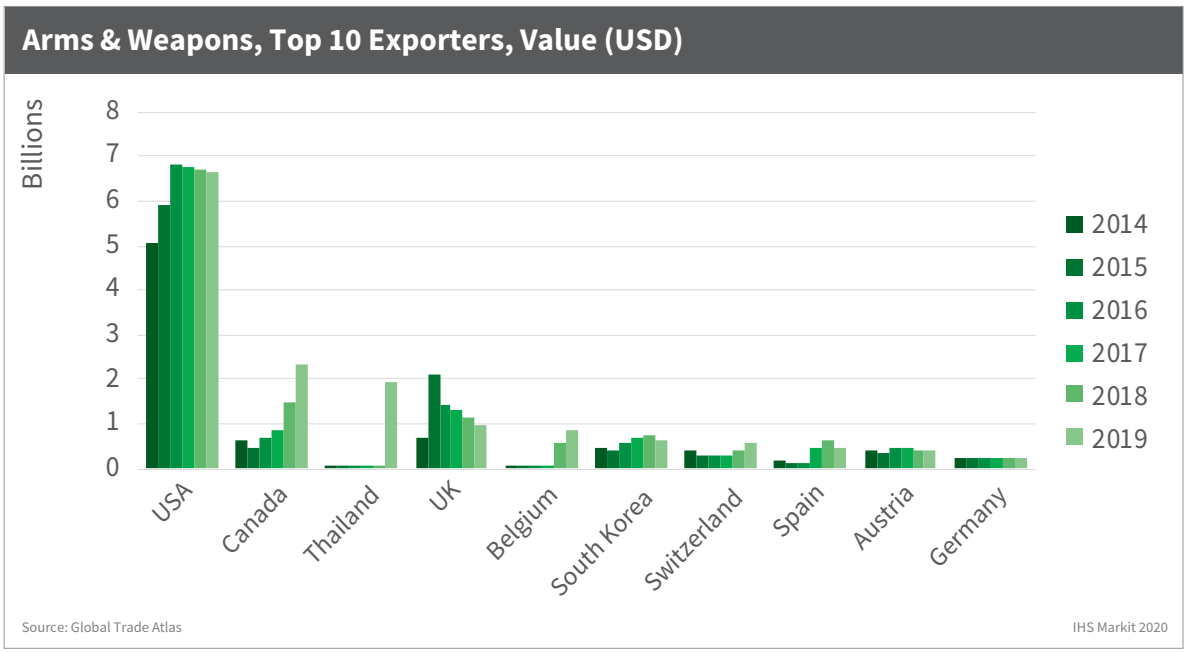


2018 and 2019 saw an extra $9 billion in trade when compared to the rest of the 2010-2019 period. Military goods trading has been on the increase since 2016, though the impact of COVID-19 on the global economy will likely result in a decrease of around $300 million in military exports for 2020. Without the pandemic and an overall decline in trade, there is every likelihood that arms and weapons trading would have nudged over the $30 billion value mark in 2020.

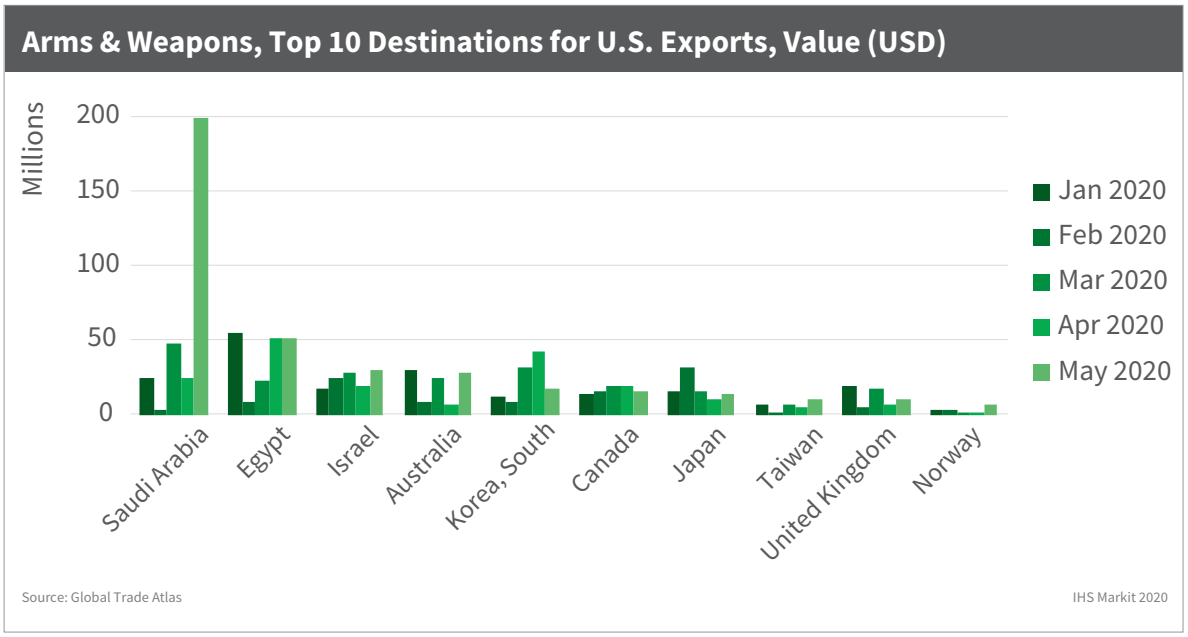
Q3 2020 numbers are not fully available for all countries yet, but the full figure is likely to be similar to the other quarterly periods in 2020.



When analyzing the major exporters, there is a definite continuity in the composition of state actors, with the U.S. as the biggest exporter by far. In 2019, the U.S. accounted for 37% of the export market for military vehicles, weapons and arms. Other countries on the list of top 10 exporters, such as Canada, the United Kingdom and Germany, captured the remainder of the market.



Regarding the main destinations of U.S. exports, Saudi Arabia was a major delivery location in the past five quarterly periods, coupled with significant orders in May 2020. For the period from January to May 2020, there was a slight shakeup in U.S. arms and weapons exports. Saudi Arabia remained the top destination, but Egypt and Australia made it into the top five for the first time in the last half decade.

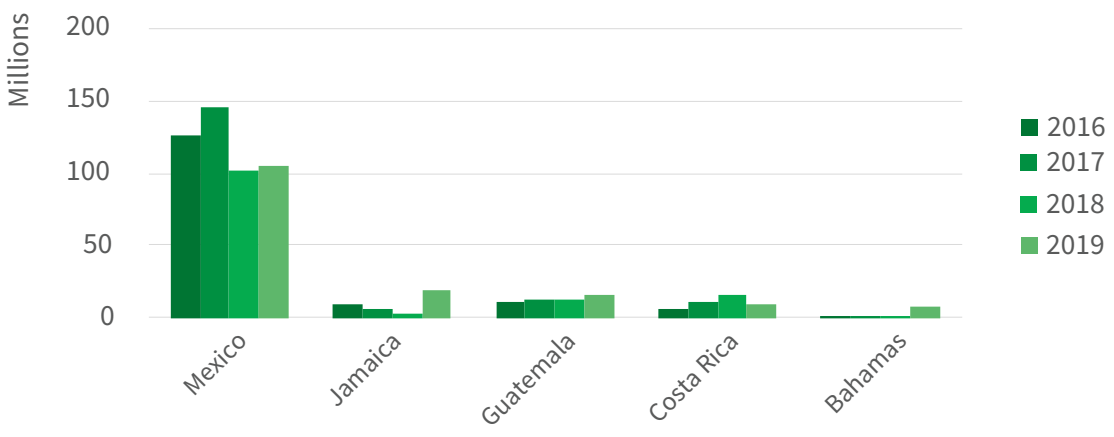


While smaller in comparison, Japan, Israel and the UAE are key markets for U.S. exports. In 2019, nearly 50% of all U.S. weapons and arms were delivered to countries in the Middle East: Saudi Arabia, Israel, the UAE and Qatar.

Arms & Weapons, Top 5 Recipients of U.S. Exports by Percentage Share					
Year	**1st**	**2nd**	**3rd**	**4th**	**5th**
2019	Saudi Arabia (25%)	UAE (12%)	Japan (9%)	Israel (6%)	Qatar (5%)
2018	Saudi Arabia (23%)	Japan (9%)	UAE (9%)	Afghanistan (8%)	Israel (4%)
2017	Saudi Arabia (29%)	UAE (13%)	Canada (6%)	Kuwait (6%)	Afghanistan (5%)
2016	Saudi Arabia (13%)	UAE (13%)	Taiwan (9%)	Afghanistan (6%)	South Korea (6%)
2015	Taiwan (26%)	Saudi Arabia (10%)	Israel (7%)	UAE (5%)	South Korea (5%)
2014	Saudi Arabia (17%)	Taiwan (10%)	Japan (6%)	Israel (6%)	UAE (6%)

Looking deeper into bill of lading content between 2016 and 2018, the numbers of shipments of military-classified items were similar, but the exports leaving the U.S. over the two-year period traveled globally as opposed to within the same region. Analyzing bill of lading data from 2016, 360 shipments of military-classified items were uncovered, with 64 exports leaving the U.S. The majority of U.S.-origin military items were sent to Germany and Jamaica. The U.S. has in recent years had a strong trading relationship with Jamaica, implementing trade agreements in order to boost the economy in the country. In return, Jamaica is seen as an important transiting hub to South America, with large trade flows of bulk commodities. Jamaica's importance as a trading partner for military items with the U.S. has increased in the period 2016-2020. After Mexico, Jamaica has been the largest importer of military items in the Central America and Caribbean region.

U.S. Military Exports to Central America & Caribbean, Total Trade Value (USD)



Source: Global Trade Atlas

IHS Markit 2020

Overall, the global arms and weapons trade spans many countries. Its value and volume make it a major component of international trade and highlights the scale and complexity of managing the associated risk.

Impact of Militarized Trade and Current Threats

Some military goods exported from the U.S. and other countries are shipped to locations that are experiencing ongoing conflicts. Saudi Arabia's military trading partnership with the U.S. while engaged in military conflict in Yemen is one such example. This same conflict has also encompassed Egypt and Qatar, both recipients of military hardware from major global economies, especially the U.S., in the last five years. In addition to local conflicts, there remain a number of threats that global sanctions have sought to curtail.

North Korea

The latest mid-year report by the U.N. Panel of Experts for resolution 1874 noted recent procurement activity by North Korea for materials related to nuclear weapons and missile development.[17] North Korea's Second Economic Committee is actively seeking items such as high-purity graphite, varieties of stainless steel, lithium hydroxide and phosphine oxide. These items are potentially used in the testing of tactical missile systems. In March 2020, North Korea tested a series of short-range ballistic missiles. While North Korea's procurement strategies are well known and include the use of shell and front companies, complex financial transactions and joint ventures with foreign entities, North Korea has also engaged in more conventional arms trading. For instance, the seizure of a military shipment destined for Egypt from North Korea in 2018 highlights the Egyptian government's efforts to secure military items, including ballistic missiles, and Pyongyang's willingness to provide them.[18]

Iran

The end of the 13-year U.N. arms embargo on Iran in October 2020 brought forward a new threat for traders, shippers and corporations. The ending of this embargo was met with a new announcement by Iran and China on subsequent trade between the two countries of certain weapons and ballistic missiles. A potential extension to this deal could also include the possibility of an oil-for-missiles type arrangement between Iran and North Korea.

As U.N. prohibitions on Iranian arms trade ended, an Iranian procurement network seeking to acquire sensitive dual-use technologies through various front companies with offices in China, Taiwan, Singapore and the UAE was recently designated by the Office of Foreign Assets Control (OFAC).[19]

Syria

The Syrian Scientific Studies and Research Centre (SSRC) has been at the forefront of attempts by the Syrian government to procure weapons, chemicals, delivery vehicles and guidance systems since the onset of the civil war in 2012. A number of SSRC divisions have been connected to missile-related shipments from North Korea and the delivery of Scud missile moldings from Iran.[20] Additionally, the SSRC has obtained products of a more dual-use nature from firms in Europe and the Middle East, as well as OFAC-embargoed countries, including propellants, chemical protection equipment and brass discs.[21] As in other examples of where dual-use and military procurement takes place, front companies have been the choice employed to avoid sanctions. While President Bashar al-Assad holds the upper hand in the civil war, it has not stopped the weapons networks from operating. North Korea was implicated in supplying industrial-scale chemicals to a weapons factory in Syria in 2018.[22]

17. https://undocs.org/S/2020/840
18. https://www.nytimes.com/2018/03/03/world/middleeast/egypt-north-korea-sanctions-arms-dealing.html
19. https://home.treasury.gov/news/press-releases/sm1180
20. https://www.treasury.gov/press-center/press-releases/Documents/Fact%20Sheet.pdf
21. http://www.un.org/ga/search/view_doc.asp?symbol=S/2013/337
22. https://www.wsj.com/articles/u-n-report-links-north-korea-to-syrian-chemical-weapons-1519760023

China

A number of defense and procurement firms in China have supplied the Iranian and North Korean governments with military and dual-use items in recent years. Several Chinese banks are under investigation for a money laundering conspiracy involving a North Korean entity via a network of front companies that potentially aided North Korea's ballistic missile program.[23] Similarly, a Chinese supplier network was involved in an attempt to act as a procurement network for Iran's Centrifuge Technology Company in 2019.[24]

These networks have also been found to be operating in Turkey and the UAE, as part of a series of trading companies diverting funds to the Islamic Revolutionary Guard Corps.[25]

In such cases, as the Financial Crimes Enforcement Network (FinCEN) noted in 2017, with Chinese and UAE company assistance, Iran has been able to circumvent "export laws and sanctions to procure technology and materials to support Iran's ballistic missile program."[26]

Trade Document Analysis

The following data analysis and case studies have been collated to highlight the common challenges and complexities found within compliance screening programs pertaining to dual-use and military items. These case studies cover:

- Regularity of certain types of goods and items
- Complexity of identifying items that only provide serial numbers or codes
- False positive examples and their occurrence in goods descriptions
- Analysis of the movement of dual-use and military items in U.S. bill of lading documents from country to country

Data from IHS Markit's Port Import Export Reporting Service (PIERS) has been used to investigate the trade flows of military goods to and from the U.S. over the period 2016-2020. A sample of trade data was taken from the PIERS database and cross-verified for military goods.

Using a military goods and hardware data list of nearly 40,000 items to search and retrieve products from U.S. bills of lading, more than 170 direct imports of military-classified items in 2020 were uncovered, with another 143 exports leaving the U.S. The majority of U.S.-origin military items were sent to European countries, notably Belgium and Germany, and also to Australia. The goods descriptions containing military items on the bills of lading ranged from generically listed items to specific military equipment and vehicles. Example terms included "Heavy Vehicles," "LPTA 715" and "Cal Rimfire Cartridges."[27]

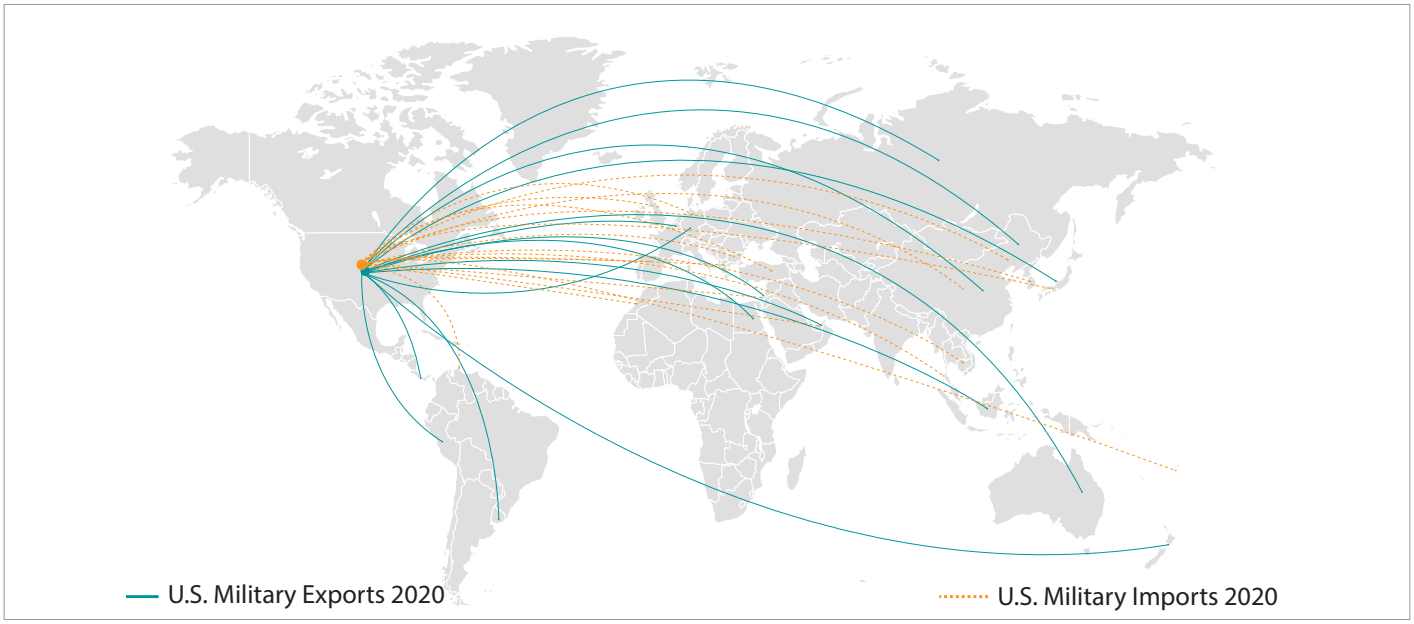
23. https://www.reuters.com/article/us-usa-trade-china-banks/us-appeals-court-upholds-ruling-against-chinese-banks-in-north-korea-sanctions-probe-idUSKCN1UQ03U

24. https://home.treasury.gov/news/press-releases/sm736

25. https://home.treasury.gov/news/press-releases/sm639

26. https://www.fincen.gov/sites/default/files/advisory/2018-10-12/Iran%20Advisory%20FINAL%20508.pdf

27. Goods Description: 'HEAVY VEHICLE VIN FD20609058X004XXX', '1 HIVAN WHEELED VEHICLE DINGO 2 4X4 WITHOUT BALLISTIC ARMOURVINNO', 'ORIGINALBL 120 FT. DRY CARGO STC OF SHOTGUN CARTRIDGES CAL RIMFIRE'



The 2020 dataset includes many instances of goods that did not have military implications but did have keywords that could trigger a military or dual-use screening hit. The below example with the keyword "Remington" provides insight into the real-world decision-making required by document checkers and compliance staff when reviewing trade documentation.

Remington Arms

The 2020 bill of lading data sample contains instances of goods that are clear military products. The results also highlight a notable number of items that could be considered "military," but upon investigation were found to be non-military.

The contextualization of a word or phrase is evident with the keyword "Remington."

"CBM REMINGTON PERSONAL GROOMER...1925 CTNS 7700 PCS TAPERED CURLING WAND PEARL."[28]

Here, the word "Remington" is related to a brand of unisex grooming equipment. It has no dual-use or military connotation and therefore would not be seen as a compliance risk. Matching on the word "Remington" in this scenario would represent a false positive requiring operator investigation, a period of time to log this red flag for audit purposes and to override it before moving on to other tasks. However, the same word does have military context in other descriptions found within U.S. bills of lading:

"4 SKIDS S.T.C. 258 FIBREBOARD BOXES CARTRIDGES SMALL ARMS REMINGTON REF 45145281 45145282 2 SKIDS...UN NUMBER 0012 CARTRIDGES FOR WEAPONS I CLASS."[29]

Here, the word "Remington" is related to a brand of shotgun, which would be a true positive match for a military item. In this goods description, the exporter has clearly labeled "Remington" with additional information to help contextualize the goods being traded: "small arms," "fibreboard boxes cartridges" and "weapon." The data below shows the number of bills of lading that included the word "Remington" over a five-year period (2016-2020),[30] along with false positive and true positive percentage rates. This data was analyzed and calculated based on the relevancy of other words within each goods description.

'Remington'; False Positive vs True Positive Ratio					
Year	**Total Trades**	**False Positives**	**False Positive %**	**True Positive**	**True Positive %**
2020	108	106	98.15%	2	1.85%
2019	79	75	94.94%	4	5.06%
2018	38	36	94.74%	2	5.26%
2017	129	128	99.22%	1	0.78%
2016	117	111	94.87%	6	5.13%

Bills of lading containing the word "Remington"; false positive vs. true positive ratio screening for military application

The table highlights that even though there are numerous trade documents with the word "Remington," only a very small percentage are actual military items. The high percentage of false positives can be remediated and quickly processed by understanding the context under which the term is used. The added level of detail in trading documentation can enhance transparency in the exchange of goods and can help counterparties more easily establish the requirements for processing and fulfilling the trade.

28. Goods Description: "PONU7566253 40DRY 96 SHIPPE RS SEAL MLCN619136 6188 CARTON GROSS WEIGHT 8272.9 KG S MEASUREMENT 64.54 CBM REMINGTON PERSONAL GROOMER S55 00G PO NO 4502317110 1925 CTNS 7700 PCS PRO WIDE TAPERED CURLING WAND PEARL"

29. Goods Description: "FSCU7730308 SEAL085085 SLWC. 9 PC SAID TO CONTAIN 4 SKIDS S.T.C. 258 FIBREBOARD BOXES CARTRIDGES SMALL ARMS REMINGTON REF 45145281 45145282 2 SKIDS...UN NUMBER 0012 CARTRIDGES FOR WEAPONS I CLASS 1.4 S PKG. GROUP LIMITED QUANTITY EMERGENCY 8004249300 PKGS. 258 BX WEIGHT 1878.327 KG"

30. Bill of lading data taken from IHS Markit Port Import Export Reporting Service (PIERS)

Double-Meaning Danger Words

Multiple generic words and phrases found in bills of lading throughout 2016-2020 could return false positive matches based on "double meaning." Examples include "cartridges," which could be military ammunition cartridges or printer ink-jet cartridges, "tank," which could be a military armored tank or a storage tank, and "gun," which could be a weapon or a water gun. The data tables shown below include analysis on all the bills of lading that contain each of the three terms -- "cartridges," "tank," and "gun" -- over a five-year period (2016-2020)[31] and their false positive vs. true positive ratios. This data was analyzed and calculated based on the relevancy of the words within the goods descriptions.

'Cartridges'; False Positive vs True Positive Ratio					
Year	**Total Trades**	**False Positives**	**False Positive %**	**True Positive**	**True Positive %**
2020	961	935	97.29%	26	2.71%
2019	869	844	97.12%	25	2.88%
2018	768	750	97.66%	18	2.34%
2017	475	317	66.74%	158	33.26%
2016	589	408	69.27%	181	30.73%

Bills of lading containing the word "cartridges": false positive vs. true positive ratio screening for military application

'Tank'; False Positive vs True Positive Ratio					
Year	**Total Trades**	**False Positives**	**False Positive %**	**True Positive**	**True Positive %**
2020	11262	11256	99.95%	6	0.05%
2019	11250	11247	99.97%	3	0.03%
2018	11388	11371	99.85%	17	0.15%
2017	8068	8066	99.98%	2	0.02%
2016	8863	8860	99.97%	3	0.03%

Bills of lading containing the word "tank": false positive vs. true positive ratio screening for military application

'Gun'; False Positive vs True Positive Ratio					
Year	**Total Trades**	**False Positives**	**False Positive %**	**True Positive**	**True Positive %**
2020	1673	1654	98.86%	19	1.14%
2019	1722	1698	98.61%	24	1.39%
2018	1804	1768	98.00%	36	2.00%
2017	1679	1638	97.56%	41	2.44%
2016	1786	1746	97.76%	20	1.12%

Bills of lading containing the word "gun": false positive vs. true positive ratio screening for military application

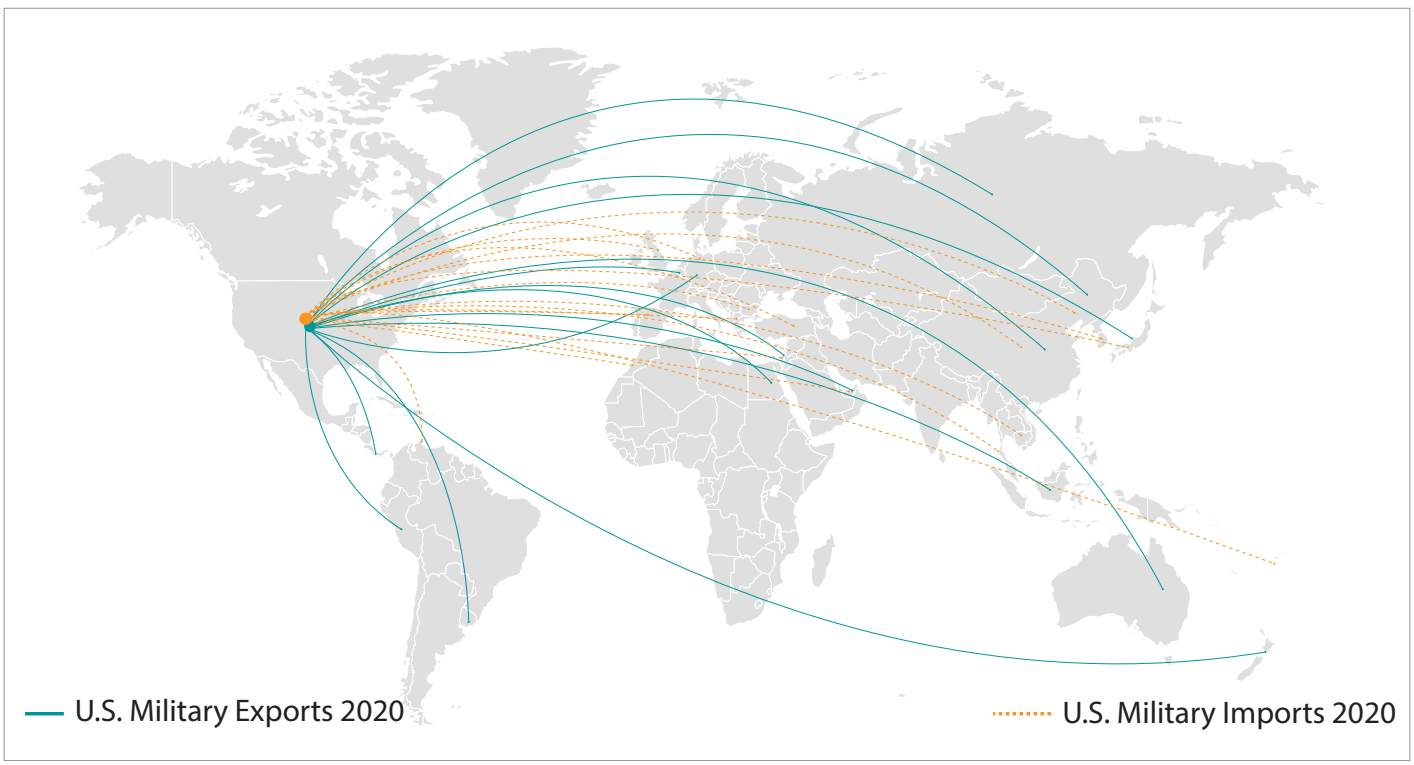
In some instances, goods descriptions for similar items contained more details, such as "REVOLVER PISTOLS 100 BAJONETT 200 SLING" and "UN0012 CARTRIDGES SMALL ARMS," but the overall data shows a low number of true positive matches against military items pertaining to "cartridges," "tanks" and "guns." It also highlights the difficulties individuals encounter when reviewing trade and payment information for military goods. For example, processing thousands of goods descriptions that include the word "cartridge" when the overwhelming majority are printer ink cartridges is time consuming and operationally inefficient.

31. Bill of lading data taken from IHS Markit Port Import Export Reporting Service (PIERS)

Specific Military Keywords

The sample dataset of bill of lading goods descriptions found that multiple vessels were used to export dual-use and military goods from the U.S. around the world. The YM Warmth (IMO: 9704647) was used on three separate occasions to ship a M60A3 tank, M113A1A2 APC (Armored Personnel Carrier) and an AAV7A1 Amphibious Vehicle, all of U.S. origin, to the ports of Keelung and Kaohsiung in Taiwan.[32]

Within the descriptions, the exporters included alphanumeric identifiers: "M60A3," "M113A1A2" and "AAV7A1," which to non-military personnel pose an identification challenge. This type of classification of goods adds a level of complexity to those looking at the trade documents when trying to determine the nature as well as the legitimacy of the trade. The fact that these shipments were transported to an unspecified importer via the vessel YM Warmth, whose registered owner is listed in Panama, a FATF grey-listed country, also indicates that a higher level of risk might be associated with processing this particular trade. In October 2020, FATF released a statement referencing Panama and other countries that suggested increased monitoring efforts and further scrutiny to help address strategic deficiencies in combating money laundering, terrorism financing and proliferation financing.[33]



32. Goods Description: "WEAPONS AND COMBAT VEHICLE SPARE LIC. TWBBED EXP. 121521 15BOX VEHICLE GUN AND TANK SPARE PART LIC. TWBBEM EXP. 101520"; Goods Description: "57PCS CONSOLIDATED 6BOX M60A3 TANK AND M113A1A2 APC SPAR"; Goods Description: "2PCS CONSOLIDATED 2PC AAV7A1 ASSAULT AMPHIBIOUS VIHICLE"

33. https://www.fatf-gafi.org/publications/high-risk-and-other-monitored-jurisdictions/documents/increased-monitoring-october-2020.html

In addition to referencing bill of lading data from U.S. records in 2020, a small sample dataset was taken from the four previous years leading up to the current date. The use of historical data allowed for an exploration of how trade information and documentation has changed over time, with the added ability of investigating changes in the flow of military trade between countries.

Overall, goods descriptions in 2016 and 2017 were more generic in nature, with smaller descriptions used to detail items being traded such as "Armored Truck," "Small Arms," and "Remington Shotguns."[34]

Although the examples above are clear military items, they are also relatively generic and do not contain many of the key identifiers that help to detail the exact type of goods being traded. Additional identifiers such as the U.N. Code used to identify hazardous and dangerous goods, or the HS Code used to classify tradable goods, were rarely evident. They also did not contain model or serial numbers for military equipment or vehicles that could be identified when checking against military manufacturer data.

34. Goods Description: "2004 INTERNATIONAL ARMOURED TRUCK"; Goods Description: "CARTRIDGE SMALL ARMS"; Goods Description: "SKID COMMODITY SHOTGUNS REMINGTON REF44381498443814994438 1500"

Humvee Military Vehicles

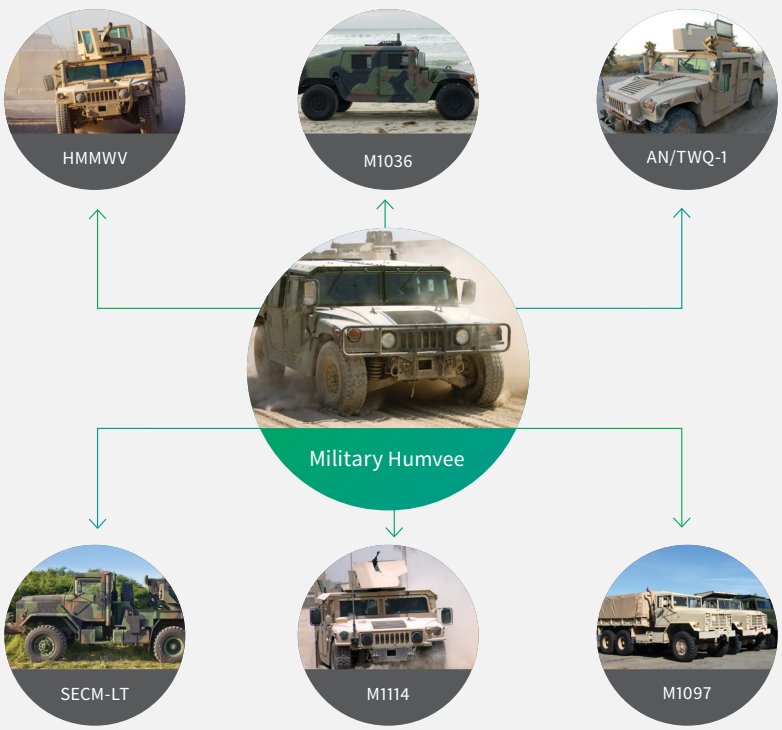
Another U.S. export bill of lading from 2018 contained the following goods description:

"X HEAVY VEHICLES TCN?MODEL?ITEM DESCRIPTION?SERIALNUMBER?WEIGHT
AWB4DAA$0D00180XX?SECMLT?SHP EQP CONT TRK MTD?250524?11000
AWB4DAA$0D00290XX?SECMLT?SHP EQP CONT TRK MTD?250805?11000
AWB4DAA$0D01640XX?SECMLT?SHP EQP CONT TRKMTD?337976?11000
AWB4DAA$0D02060XX?M1075?TRK CGO HVY PLS TRANS?10TKL9Y1865087656?49960
AWB4DAA$0D02150XX?M1076?TLR PLS 1612TON?092987?17020
AWB4DAA$0D00110XX?M984A4?HEMTT WRECKER?10T2K1J25M1042779?54100
AWB4DAA$0D00040XX?M1097?TRK UTIL HVY HMMWV?574400?10001"

In this example, as opposed to free text being entered in the goods description, a table of headers, followed by multiple alpha-numeric characters, lists the goods for transit. This trade documentation would be time consuming to review manually, as there is no clear description of the goods being traded other than "HEAVY VEHICLES." This term on its own would not trigger concerns that the item has a dual-use or military application. However, the numerous serial and model numbers listed in the bill of lading should also be checked, compounding the efforts to accurately identify and verify the trade.

By examining the model codes listed in the bill of lading against a proprietary dataset of military and dual-use items, a number of military tanks and heavy-duty vehicles were identified. The model numbers "SECM-LT," "M1075," "M1076," "M984A4" and "M1097" all relate to restricted military products. The description table in the bill of lading also includes abbreviations for military vehicles, such as "HEMTT," or "Heavy Expanded Mobility Tactical Truck," and "HMMWV," an acronym for "High Mobility Multipurpose Wheeled Vehicles" or "Humvees."

Without in-depth knowledge of the defense and military sector, it is highly unlikely that operators at banks, freight or cargo institutions manually reviewing trade documents with abbreviated product coding sequences would know that the goods being traded are military vehicles.



Diversion Risk to MEUs and Sanctioned Networks

The following case studies illustrate some of the different financial crime and sanctions risk typologies that are seen in military and dual-use trade networks and illuminate red flag indicators of potential weapons and dual-use trade diversion to military end uses or end users outlined in recent EU and U.S. guidance. Effective trade compliance controls include conducting a transaction risk assessment to ensure that none of the parties involved in the transaction are sanctioned or owned or controlled by sanctioned parties or firms that could be acting on behalf of a prohibited party.

The examples are derived from an analysis of trade data and other open source data involving restricted weapons and dual-use goods and the parties involved in this trade, including manufacturers, shippers, consignees, notify parties, freight forwarders, brokers and agents, as well as the individuals or entities that own and operate these firms.

Diversion scenarios include:

- Heightened-risk ports and suspicious maritime activity;
- The transfer of prohibited materials through supply chain intermediaries;
- Procurement fronts for a sanctioned individual or company;
- A consignee or procurement agent operating within a corporate structure involving one or more sanctioned parties implicated in end use activities.

Heightened-Risk Ports and Suspicious Maritime Activity

Suspicious Vessel Movements

Recent maritime guidance emphasizes the importance of examining the movements of vessels carrying cargo on behalf of customers and parties to identify suspicious activities, such as a prolonged turn-off of the vessel's AIS transponder or a history of visits to embargoed ports.

Identifying suspicious maritime activities is particularly important when a vessel has a history of carrying military or dual-use items.

As part of the analysis of IHS Markit maritime and trade data,[35] a number of vessels used to export military goods from the U.S. to Central America in 2016 were found to have compliance warnings for sanctioned country port calls. The majority of these severity warnings are for port visits to Cuba, a U.S.-embargoed country. The vessel Seaboard Atlantic (IMO: 9395563) made port calls in Cuba, most recently on July 23, 2020. Similarly, the Paradero (IMO: 9368998), a container ship flying a Jamaican flag, visited Cuba on four separate occasions between 2015 and 2020, most recently on Aug. 27, 2020. The same vessel, while traveling to Port Everglades, Florida, in November 2019, incurred an AIS transmission gap of more than 24 hours when sailing in close proximity to Cuba. This length of suspected "dark activity" may have been enough time for the vessel to conduct a Cuban port call and load or unload unspecified cargo. Citing OFAC and the United Kingdom's Office of Financial Sanctions Implementation (OFSI) vessel guidance papers, this type of illicit vessel behavior requires enhanced due diligence and appropriate action taken by trade operations screening staff to verify the trade based on their risk assessment procedures.[36] In situations where a vessel appears to have engaged in suspicious activities, it is also important to analyze the owner and operator of the vessel and other vessels controlled by these firms to surface a broader pattern of suspicious conduct that could inform a compliance determination.

35. Maritime vessel data taken from IHS Markit Maritime Intelligence Risk Suite (MIRS)

36. https://home.treasury.gov/system/files/126/05142020_global_advisory_v1.pdf and https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/903901/OFSI_-_Maritime_guidance__July_2020_.pdf

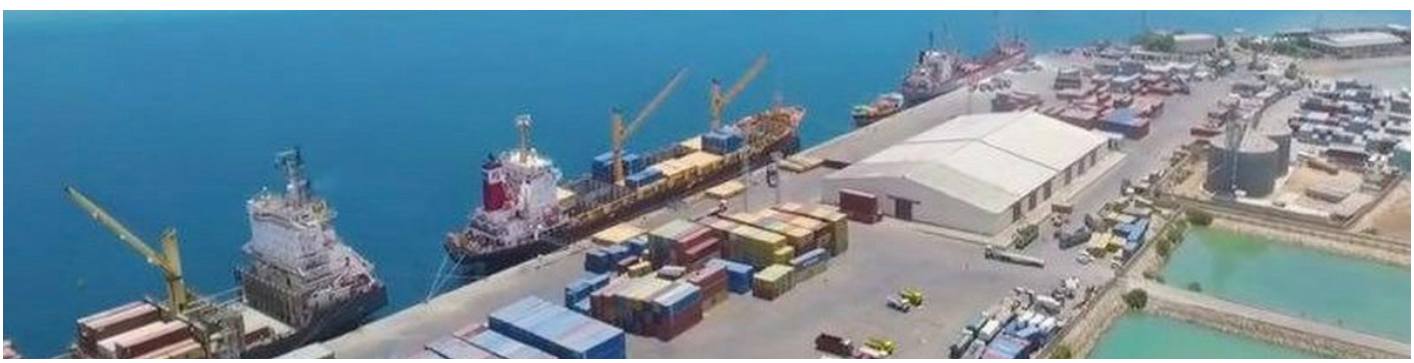
Further investigation of other vessels with the same operators as the Paradero (IMO: 9368998) and the Seaboard Atlantic (IMO: 9395563), Crowley Liner Services and Seaboard Marine, respectively, revealed that there were other instances of military goods shipments by these two vessel operators from November 2019 to October 2020. In the last twelve months, there were 54 exports of U.S.-origin military items using the aforementioned vessel operators.[37] The large majority of the shipments included generically listed items such as "cartridges," "shotgun parts" and "rifle parts" being exported to countries in Central America and the Caribbean, namely Panama, Jamaica and Honduras.

However, one of those shipments was carried to Mariel in Cuba by the vessel K-Storm (IMO: 9389435), operated by Crowley Liner Services. The bill of lading goods description listed "4 skids fibreboard of cartridges." Although the operator has clearance from the U.S. government and regulatory authorities[38] to carry predefined cargo to Cuba dating back almost twenty years, military items are not on the approved list and would therefore require further compliance investigation and action.

The vessel K-Storm on the far right, loaded with Crowley-branded containers (Attribution: Yanjipy, CC BY-SA 4.0, via Wikimedia Commons)

Further analysis of the K-Storm's port calls found it had been to Cuba on 14 separate occasions in the last five years, with more regular visits in the last 12 months. In many cases, the vessel's journey would begin from a U.S. port. This vessel's repeat visits to an OFAC-sanctioned country, along with the Paradero also sailing on similar routes, could be a cause for concern for trade and supply chain operators evaluating a transaction with a vessel owned or operated by Crowley Liner Services or Seaboard Marine.

Heightened-Risk Ports



Port of Berbera, Somalia (Attribution: Lakmi00, CC BY-SA 4.0, via Wikimedia Commons)

37. Bill of lading data taken from IHS Markit Port Import Export Reporting Service (PIERS)
38. https://www.crowley.com/logistics/specialized/cuba-express/

When a controlled item is identified as part of a screening or due diligence inquiry, it is important to evaluate the context surrounding the port of destination for the shipment and the commercial purpose of the item for the consignee in that jurisdiction.

India-based Vijay Enterprises transported numerous shipments of nitric acid destined for Somalia between November 2019 and July 2020. Though the specific consignees of these shipments were not named in the bills of lading, the combination of the product plus the destination provide enough information to determine that these shipments likely present heightened end use risk.

"Nitric acid can be mixed with sulfuric acid and glycerine to produce nitroglycerin, which has been detected in multiple laboratory analyses of Al-Shabaab home-made explosives," a November 2019 U.N. Panel of Experts report on Somalia said. Al-Shabaab is the U.N.-sanctioned al-Qaida affiliate in Somalia. "Explosive ordnance specialists consulted by the Panel have indicated that there is no legitimate industrial demand for concentrated nitric acid in Somalia," the same report said.

Based on this information provided by the U.N., there appears to be no legitimate commercial reason why nitric acid would be sent to Somalia, and it additionally poses the danger of being diverted for use in explosives. An institution that may be servicing payments or providing carrier services for such a shipment would want to obtain information from Vijay Enterprises or other trading parties as to the purpose and end users of the nitric acid shipments, and seek to independently verify the information, before engaging in any transactions.

Transshipment of Prohibited Items

There is concern that export control efforts may be stymied by the diversion of goods through transshipment hubs adjacent to embargoed jurisdictions such as Iran, Syria or North Korea. Clandestine procurement networks acting on behalf of proliferation-related actors may seek to exploit commercial supply chains and obscure the ultimate end users of goods being shipped.

Some jurisdictions where transshipment hubs operate may have less stringent export controls, allowing traffickers and intermediaries to more easily mask and transfer the weapons or goods to the true destination of a shipment. Combined with large volumes of trade at major ports, these circumstances can enable an environment in which illicit shipments can pass through undetected.

Some examples of jurisdictions with major transshipment hubs include the UAE, Lebanon, Taiwan, Singapore and Hong Kong. These ports are typically characterized by high shipping volumes, which present complex challenges for counterproliferation efforts. Additionally, ports in southeastern Russia, including Nakhodka and Vladivostok, and ports in northeastern China, including Dandong and Dalian, have been identified by U.S. regulators as heightened-risk ports for North Korea exposure.

The U.N. Panel of Experts on North Korea produced a detailed report in August 2020 that highlighted the procurement activity via third countries of nuclear and missile materials.[39] One of the items named in the list of procurement materials was lithium hydroxide, a material added to reactor coolants to curb metal corrosion of nuclear cooling pipes. In 2018, the North Korean Second Economic Committee stated that it was seeking to procure lithium hydroxide using its network of external contacts and organizations.

39. https://undocs.org/S/2020/840

Lithium hydroxide has a number of commercial uses. It can be used in ceramics and cement mixtures and has other applicable uses in batteries. Over the last five years, from 2016-2020, exports of lithium hydroxide from the U.S. have fallen by half:

2020 – 176

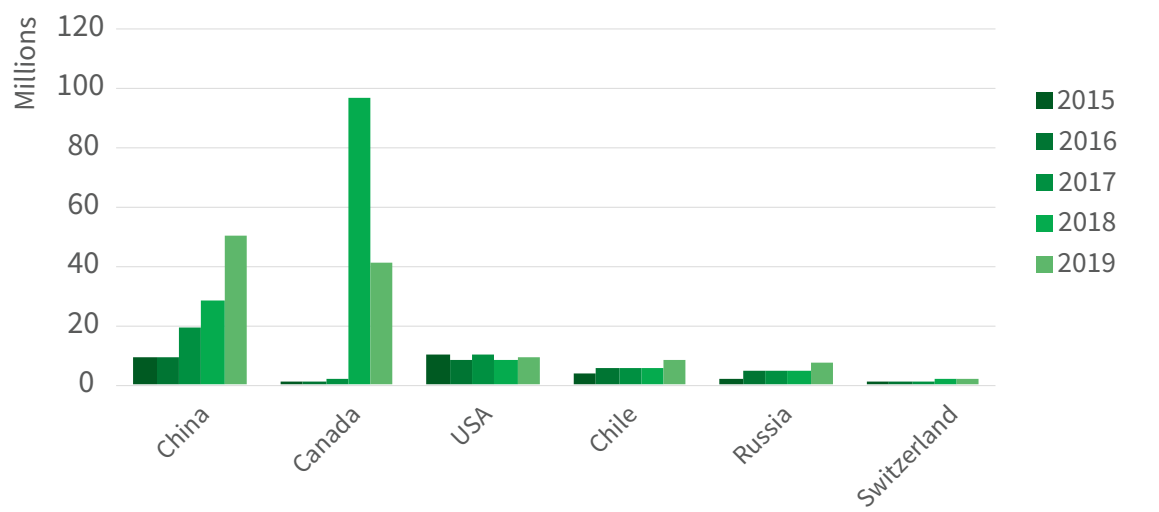
2019 - 181

2018 - 255

2017 - 277

2016 – 352

Lithium Oxide and Hydroxide, Top Global Exporters by Quantity (Kg)



Source: Global Trade Atlas

IHS Markit 2020

While shipments of lithium hydroxide are not widely prevalent within U.S. bills of lading, they are a high-risk item due mainly to a stream of shipments destined for North Asian ports and the emphasis by the U.N. on North Korea's active procurement of the material.

The U.S. trade in lithium hydroxide is largely centered around three main east coast ports: New York; Charleston, South Carolina; and Savannah, Georgia. Most shipments from New York and Savannah are discharged in Madras, India, and a variety of ports in northern Europe. Exports of lithium hydroxide from Charleston typically move west to ports in North Asia. Ports that have received a significant amount of lithium hydroxide from Charleston in the last five years include Tokyo, Busan, Osaka, Hong Kong and Kobe.[40]

Vessels carrying lithium hydroxide leaving the ports of Los Angeles and Oakland, California, are usually transporting the material to China. Outbound Los Angeles vessels predominantly ship to Shanghai, while vessels departing from Oakland travel to Dalian, China.

40. Data mined from IHS Markit's bill of lading database (PIERS) for U.S. imports and exports

While exports of lithium hydroxide from west coast ports have dropped in recent years, the shipments to Dalian, China, present an important red flag for further due diligence, particularly following the U.S. advisory warning about the risk of diversion of lithium hydroxide to North Korea. Dalian is a city situated on the China-North Korea border that the U.S. and Hong Kong have repeatedly highlighted as an area of concentrated North Korea-related commercial and transshipment activity.

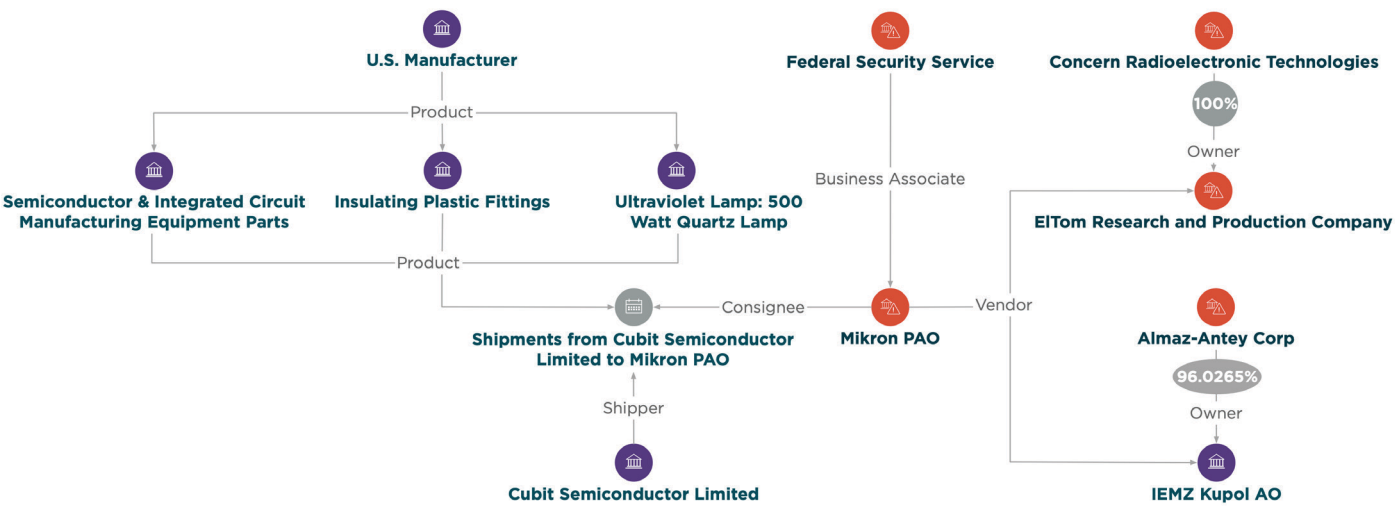
Diversion Through Intermediaries

U.S. and EU guidance warns of diversion risks involving trade with firms located in a third country other than the places of product origin and end destination. Red flag indicators for third party diversion might include situations where the end user is a trading company or distributor based in a free trade zone, or where the trading company lists contact information that is shared with another entity in a different location.

In other situations, the restricted technologies are purchased by third party entities that then appear to resell the items to end users or sanctioned parties in other jurisdictions.

For example, PJSC Mikron, the largest manufacturer and exporter of microelectronics in Russia, was added to the BIS Entity List in 2016 for operating in Russia's arms or related materiel sector. Mikron also was licensed by the Russian Federal Security Service as of September 2019 to provide services and create security tools related to state secrets, according to a company quarterly report.

Despite its BIS listing, Mikron has continued to import U.S.-made electronic components used in the manufacture of semiconductors through an Ireland-domiciled trade intermediary, Cubit Semiconductor Limited, trade data shows.



From September 2017 to December 2019, Mikron imported numerous shipments of U.S.-made ultraviolet lamps, semiconductor manufacturing equipment parts, insulating plastic fittings, and other items. At least some of these items are subject to dual-use trade controls.

Since 2016, Mikron has also supplied more than 660 million rubles in microelectronics equipment to two different majority owned subsidiaries of sanctioned Russian companies - IEMZ Kupol and ElTom Research and Production Company. IEMZ Kupol is majority owned by Almaz-Antey, and ElTom is majority owned by Concern Radioelectronic Technologies. Pursuant to the U.S. 50% rule, entities majority owned by sanctioned firms are blocked by law even if they are not named on a sanctions list.

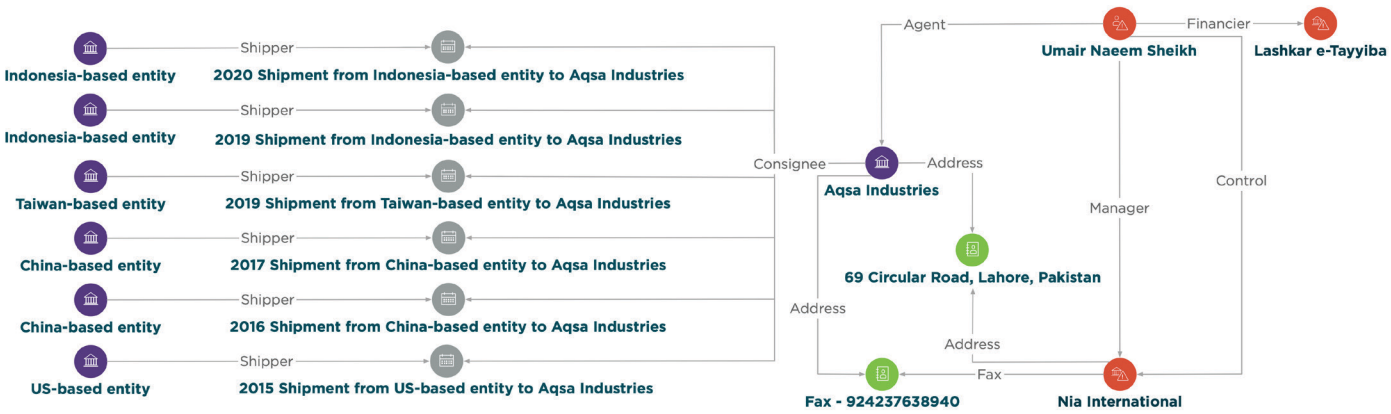
Fronts for Sanctioned Parties

In some situations, sanctioned parties may attempt to maintain access to prohibited commercial activities by using front companies or companies ultimately owned or controlled by them to accept shipments on their behalf. Since only the names of consignee front companies are likely to appear on some shipping records, rather than the names of the ultimate recipients, certain prohibited or heightened-risk shipments would not necessarily raise red flags unless further due diligence is conducted into the consignee's larger network.

Pakistan-based chemical company Aqsa Industries imported chemical products from a U.S. company and at least eight China-, Indonesia-, and Taiwan-based firms from 2015 through 2020, according to trade data. The shipped products included phenol, sodium sulphide and phosphoric acid, which are subject to trade controls. Sodium sulphide is considered to be a chemical weapons precursor, according to the Australia Group product listings.[41]

Umair Naeem Sheikh, a Pakistani national based in Lahore, was a contact person for Aqsa Industries, according to websites, social media and online business directories. Sheikh was sanctioned by the U.S. in 2014 for being one of the most significant financial supporters of Lashkar e-Tayyiba, a Pakistan-based al-Qaida affiliate.

Aqsa Industries shares a Lahore address and a fax number with Nia International, another chemical products company sanctioned for being controlled by Sheikh.



After being sanctioned, individuals often establish new firms or turn to others they already control to enable their networks to maintain commercial relationships. In this case, Sheikh is listed as the contact person for Aqsa Industries, and the shared identifiers and similar business profiles for Aqsa Industries and Nia International all present red flags.

Complex Corporate Structures

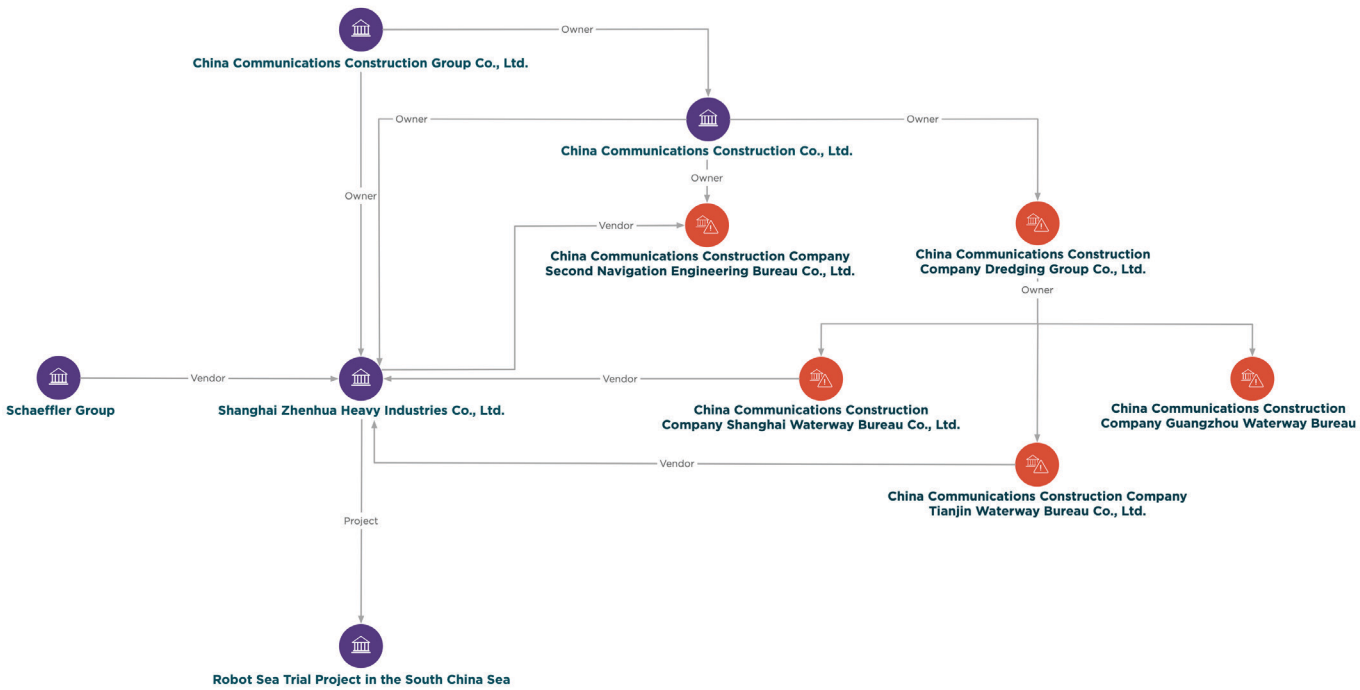
In other situations, consignees may pose risk through their ownership structures, where the trading party is a subsidiary or sister company of sanctioned or end user firms.

Schaeffler Group is a German manufacturer of rolling element bearings for automotive, aerospace and industrial uses. The company supplies industrial parts for firms in Europe, Asia and North America, including nuclear reactor technology, to firms in the U.S., according to IHS Markit trade data.

41. https://www.dfat.gov.au/publications/minisite/theaustraliagroupnet/site/en/precursors.html

Schaeffler Group signed an import procurement agreement to supply Shanghai Zhenhua Heavy Industries, a subsidiary of China Communications Construction Group, with industrial products including bearings, according to a press release issued by China Communications Construction Group. Shanghai Zhenhua constructs vessels and sells steel structures and ship accessories.

Five other subsidiaries of China Communications Construction Group were added to the BIS Entity List in August of this year for their involvement in China's military operations in the South China Sea.



Shanghai Zhenhua engaged in trade with three out of the five listed sister companies in 2020, both buying and selling goods and services, according to a semi-annual report for the company. Shanghai Zhenhua is also undertaking a robot sea trial project in the South China Sea, based on tender documentation from 2019.

Considering Shanghai Zhenhua's position as a sister company of entities subject to export controls, extra diligence would likely be appropriate to verify the end uses and end users of products sold to the company.

In another situation involving the same manufacturer, Schaeffler Group appears to have partnered with a Russian bearings company that was sanctioned for supplying a North Korean company. Bearings manufactured by a Schaeffler Group firm were marketed on the website of the Russian company Ardis-Bearings LLC; the same brand was also listed as a partner of Ardis-Bearings LLC as recently as late 2019. Ardis-Bearings LLC was sanctioned in 2017 for providing supplies to the Korea Tangun Trading Corporation, which procured commodities and technology to support North Korea's defense research and development programs.

Bearings were specifically listed in the September 2020 U.S. advisory on North Korean ballistic missile procurement as one of the "key items" used by the North Korean defense program. In addition, Ardis-Bearings and its director were specifically cited in the advisory as examples of entities and persons sanctioned for assisting North Korea's weapons procurement efforts.

Since its products were listed on the Ardis-Bearings website well after the company's designation, Schaeffler Group would want to confirm whether any trade activity continued to take place after the designation of Ardis-Bearings, or if Ardis-Bearings was just continuing to list Schaeffler Group as a partner.

Recommendations and Frameworks

As industry continues to navigate the complexities of managing compliance at the crossroads of trade controls and sanctions risk, it is important for firms to take a risk-based approach in managing their trade and sanctions-related exposure. Investments in trade and sanctions compliance capacities should be oriented toward firms and product lines with the highest level of geographic and commercial risk.

As firms address changing regulatory expectations that call for a holistic review of commercial relationships up and down a firm's supply chain, institutions must go beyond basic KYC procedures and the screening of control and sanctions lists to understand the key commercial relationships of customers, counterparties and other firms engaged in trade in military, dual-use or conventional items.

Enterprises may wish to evaluate where they face the greatest likelihood of exposure to military end use and sanctions activities, whether it is through customers or counterparties or indirectly via vendors and suppliers to these firms. Understanding how the supply chains of customers and counterparties present risk for individual firms can then inform how to most effectively address compliance challenges.

In the context of trade involving weapons and dual-use goods and technology, guidance mandates that firms retain and train compliance staff with technical expertise in navigating the complex control environment. Personnel should be positioned to effectively identify items subject to controls in the KYC and screening process and be empowered to communicate with industry and regulatory stakeholders to reach the correct determination.

Once the control verifications are complete, it is equally important to examine the trade as part of a broader network involving an array of actors that could present diversion risk to prohibited military end users or sanctioned firms.

However, accomplishing these objectives with limited resources and staff can be very challenging without investing in enriched trade data and network analysis solutions that surface controlled items, the firms engaged in this trade and related parties that may present diversion and sanctions risk.

Utilizing data solutions that are quality controlled and augmented by analysts can enable institutions to reach evidence-based decisions regarding escalated trade control and sanctions matters, while providing a defensible enhancement to the compliance process if and when regulatory challenges arise.

Practical Measures

Building a Data Foundation

Many of the off-the-shelf dual-use goods and military product lists used by banks, insurers and cargo operators to identify red flags as part of a goods description screening strategy are not exhaustive. Additionally, a reliance on Google Search to research unknown items and products found within trade documents is not feasible in the long term, particularly for those organizations dealing with large transaction volumes. Therefore, an approach to source "big data" from commercial providers that possess expertise in the management of content dictionaries across the military, electronics and chemical sectors, for example, provides a more efficient foundational basis from which dual-use and military risks can be screened and reconciled. A "big data" foundation would allow for product-orientated goods descriptions such as the Humvee military vehicle model number, SECM-LT, to be captured and handled efficiently without running the risk of missing it within

the screening process. Commercial organizations that provide materials including inventory for the raw components and parts required to manufacture finished products are a natural starting point for potential dual-use items.

Appropriate Technology

One of the most resource-intensive costs of goods screening compliance occurs with the frequency and subsequent management of false positives. Within the screening process, any false positive output found as a result of dual-use or military goods checks needs to be investigated and resolved before the operations team can proceed with the remainder of the transaction. The time and resources required to deal with this side effect of compliance screening can have a significant adverse impact on the overall productivity of a compliance team.

The use of data lists that include various instances of "danger" words is often counterproductive in this type of process. Highlighted in this paper are the false positives returned from keywords such as "cartridges," "tank," "gun," and even "Remington," at the product and brand level. These keywords are all examples of items that any dual-use and military screening tool needs to contain. The management of false positives in such cases does require a machine-enhanced technological approach to prevent an undue burden on operations teams. A machine learning function that can refine data output through the use of negative keywords is recommended to handle the many variants of "gun" -- "glue gun," "toy gun," "spray gun," and "nail gun" -- that may appear within a trade document.

Learning from Historical Transactions

Machine learning offers a unique approach to the management of dual-use and military goods screening as banks, insurers, cargo companies and freight organizations possess the raw content found within trade documents that can feed new knowledge into an internal algorithm, thereby improving its results output. Historical transactions containing bill of lading documents will contain insights into types of brand or product names, such as a U.S. bill of lading from 2018 that includes the phrase "BRITISH CVRT SABRE VEHICLE." This item, a British-made military tank, can be added to a machine learning application so that it is remembered as a future term and so that word associations such as "CVR(T)," or "Combat Vehicle Reconnaissance (Tracked)," are documented.

One of the key disadvantages to this process is the manual effort required to pre-load goods descriptions and to benchmark output so that an organization becomes comfortable with a certain level of results. Commercial organizations that have recourse to bills of lading or other trade documents in the public domain can help provide an out-of-the-box experience that financial institutions and others can benefit from without the initial, costly outlay of building the service from scratch.

Screening Goods at the Individual Transactional Level Can Be Effective

One of the negative items of feedback regarding dual-use and military goods screening has been centered on how much information can actually be acquired from a single goods description. Instances of "aluminum piping," "ball bearings" and "butterfly valves" on their own provide little valuable detail as to the probability of the materials being acquired by proliferation networks. These examples are difficult to evaluate as to their potential red flag status without considering other elements from the transaction, such as customer information, the ultimate end user and the destination of the goods.

In situations where dual-use items with a multitude of applications such as ball bearings are screened, it is particularly appropriate to examine the product data against a network analysis solution to surface connections to sanctions-related networks. In this context, it is important for organizations to complement their existing KYC and AML functions with a strong network analysis tool and commercial data dictionaries that enable financial institutions, freight operators, cargo carriers and others to pinpoint and understand the variety of military products moving through the flow of commerce.

Focus on Activities of Proliferating States

Emphasis on North Korea's ballistic missile procurement activity by the U.N and the U.S. in recent publications highlights the exact products currently sought by proscribed state actors. Some of these products are highly specialized, such as inertial navigation systems, chemical propellants and electronic relays. None of these items can be manufactured by North Korean industry, which necessitates North Korea's efforts to acquire the technologies from overseas suppliers. This suggests that a limited number of product manufacturers would need to be engaged by North Korean front companies or individuals to source such products. It also points to the strong likelihood that any procurement would not be hidden under false wording or false descriptions within trade documents. As highlighted in this paper, lithium hydroxide is a particular chemical sought by North Korea, and it warrants an investigation by financial institutions as well as cargo and freight operators in order to understand exposure, particularly when the material is exported to a port such as Dalian, China, with heightened risk for North Korean trade activity. By employing a network-based approach to risk analysis, steps can be taken to identify which customers of a bank, cargo organization or insurance company are heightened-risk in relation to trading such an item. Customs data and established trade routes also hint at indicators of possible diversion routes through third country transshipment zones. Narrowing down the risk within the overall customer and goods profile will allow for better targeting of compliance resources and may potentially yield more effective results.

Military Goods Identification

Technical expertise is not a major requirement when it comes to identifying military goods in trade documents. Technical expertise could be of use when considering whether potentially dual-use items, such as stainless steel sections with a certain diameter or tensile strength, are for military use or not. In the context of military items, though, deciphering a particular product description as military is more straightforward. For instance, some of the bills of lading analyzed by this paper included terms such as "Beretta," CVRT Sabre," "Heckler HK33," "M1045A2" and "DFS Trophy System." All of these items are military products, some more obvious than others.

Using "DFS Trophy System" as an example, the term alone is enough to determine through basic Google-based research that the product is a military countermeasure system designed to offer land vehicles protection from incoming missiles or mortars. However, using the Google search engine does have drawbacks in the identification process. The search term "DFS Trophy System" returns a number of unrelated results in Google, including furniture, football-related websites and a film festival. Refining the search phrase with a military keyword retrieves a fuller set of results covering the actual manufacturer details.

However, the manual research process is inefficient and subject to analyst error. An extensive military or defense parts dataset incorporated into a compliance screening tool that identifies proliferation-sensitive goods would reduce both investigation time and guesswork.

No approach or framework for identifying military goods and dual-use technologies is foolproof, but certain measures can ensure a more robust policy when dealing with corporate network risks and the understanding of particular goods and products. Incorporating a mixture of data-oriented transactional screening and contextual analysis can further improve compliance controls for institutions at the sharp end of identifying proliferation financing, as well as help to streamline customer turnaround times, reduce inefficiencies and block proliferators, terrorists and other illicit actors.

Annex 1

Compiled list of military items found in U.S. import and export bills of lading for the period 2016-2020

Identified Bill of Lading Product Name	Product Description
LPTA 715	Indian-origin heavy tactical military truck
Cal Rimfire Cartridges	Ammunition, metallic cartridge
Remington	American manufacturer of arms and ammunition
M60A3	M60 series, American battle tank
M113A1A2	Tracked armored personnel carrier
AAV7A1	Amphibious troop transport vehicle
DFS Trophy	Active military protection system, protecting vehicles from anti-tank weapons
ADCP	Acoustic Doppler Current Profiler, sonar and water scanning instrument for submersibles
TACAN	Military aircraft tactical air navigation system
Beretta	Italian firearms manufacturer
CVRT Sabre	Armored vehicle, Combat Vehicle Reconnaissance (Tracked), manufactured in the United Kingdom
Mosin Nagant	Russian rifle and weapons manufacturer
Winchester	Rifles manufactured by the Winchester Repeating Arms Company
IAG Guardian	Military armored vehicle manufactured in the United Arab Emirates
Red Dot Scope	Infra-red rifle scope
Land Launcher	Catapult and launch system for UAVs (Unmanned Aerial Vehicle)
SECM-LT	Humvee, military and utility vehicle
M1075	Humvee, serial number for a palletized load system military truck
M984A4	Humvee, serial number for the Heavy Expanded Mobility Tactical Truck
M1097	Humvee cargo and troop carrier
HEMTT	Humvee, Heavy Expanded Mobility Tactical Truck
HMMWV	Humvee, High Mobility Multipurpose Wheeled Vehicles
SA80	British Armed Forces assault rifle
Hugin AUV	An Autonomous Underwater Vehicle (AUV) developed by Kongsberg Maritime with civilian and military applications

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