EXHIBIT 71

The 2023 Ship Steel Supply and Demand Symposium was held - Implementing the work plan for stable growth and promoting coordinated development of the industrial chain

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China Metallurgical News China Steel News Network
Reported by reporter Lu Lin
Photography by special correspondent Lan Yigao

Recently, seven departments including the Ministry of Industry and Information Technology, the National Development and Reform Commission, the Ministry of Finance, the Ministry of Natural Resources, the Ministry of Ecology and Environment, the Ministry of Commerce, and the General Administration of Customs jointly issued the "Work Plan for Steady Growth of the Steel Industry" and proposed the goal of steady growth. and measures to strengthen cooperation with downstream industries such as the shipping industry. In order to further deepen the connection between supply and demand in the steel and shipbuilding industry chains and promote industry transformation, upgrading and high-quality development, on September 7, hosted by the China Iron and Steel Industry Association (hereinafter referred to as the Steel Association) and the China Shipbuilding Industry Association (hereinafter referred to as the Shipbuilding Association), The 2023 Ship Steel Supply and Demand Symposium, hosted by Nippon Steel Yingkou Medium Plate Co., Ltd. and co-organized by Shanghai Futures Exchange and Shanghai Steel Federation, was held in Yingkou, Liaoning.

The picture shows the meeting scene

Luo Tiejun, member of the Standing Committee of the Party Committee and Vice President of the Iron and Steel Association, Wu Qiang, executive vice president of the Shipping Association, He Qingwei, member of the Standing Committee of the Municipal People's Government of Yingkou City and deputy mayor, Zhang Ming, deputy general manager of the Shanghai Futures Exchange, Feng Wei, general manager of the medium plate of Japan Steel Yingkou Rich enough to speak or deliver speeches. Liu Jing, Vice President of Shanghai Ganglian E-Commerce Co., Ltd., and other guests attended the meeting. Wang Yingsheng, chief economist of the Iron and Steel Association, and Tan Naifen, deputy secretary-general of the Shipbuilding Association, presided over the meeting.

Pictured is Luo Tiejun

Luo Tiejun said in his speech that this is the third time that the Steel Association and the Shipping Association have held an upstream and downstream supply and demand symposium, which has increased the intensity of supply and demand docking and everyone's mutual understanding, promoted the development of new products and the coordination of the industrial chain, and achieved results The good cooperation results have also set a model for cooperation between the steel industry and other downstream industries. This meeting is the continuation and deepening of the first "Changshu Conference Spirit" and the implementation of the "Steel Industry Stable Growth Work Plan".

Luo Tiejun pointed out that since the beginning of this year, the operating environment of the steel industry has been relatively severe. Enterprise production and operations are facing challenges such as output exceeding demand, falling steel prices, and rising raw and fuel costs. The overall economic efficiency has been at a low level in recent years. The steel industry has a more realistic and clear understanding of the long-term and inevitability of changes in the market environment. Judging from the industry's operation in the past two months, the output control measures taken to achieve a dynamic balance between supply and demand are taking effect, and the economic benefits are trending towards Steady and good. The steel industry is confident of doing a good job in the follow-up work, calling on steel companies to rationally arrange their production according to supply and demand, and spend more energy on variety, quality and depth of service to downstream industries.

Luo Tiejun said that my country now has more than 70 medium and heavy plate production lines with a production capacity of more than 100 million tons. Among them, Baowu, Anshan Iron and Steel, Shagang, Xiangshan Iron and Steel, Ripco Yingkou Medium Plate, and Nanjing Iron and Steel have a total of 7 sets of five-meter rolling mills. In 2021, the bulk raw material market has experienced ups and downs. The steel and shipbuilding industries have actively cooperated through signing long-term agreements and other methods to stabilize certain risks. Ship steel use has grown steadily since 2022, supporting steel demand to a certain extent. As the proportion of high value-added ship orders in my country's shipping industry increases, the supply capacity of high-end marine steel products continues to increase. All crack arrest plates for large container ships have been replaced by domestic products. The localization rate of duplex stainless steel for chemical ships has increased from less than 50% to 90%. As mentioned above, the domestic high-manganese steel tank project has been successfully launched, and the special stainless steel for domestic membrane-type LNG ship tanks has passed the certification of the patent company. The supply chain safety and quality level of the steel-shipping upstream and downstream industry chains have been significantly improved. He also pointed out that while the steel and shipbuilding industries are further strengthening close cooperation, there is still much room for improvement. For example, the intelligent upgrade of shipbuilding companies has put forward higher demands for steel quality stability and customized distribution. He hopes that the two industries will work together to eliminate the shortcomings in the connection of supply and demand that are not conducive to cooperation and high-quality development between the two parties, continue to strengthen cooperation, work together to achieve a win-win situation in the industrial chain, and jointly follow the path of high-quality development.

Pictured is Wu Qiang

Wu Qiang said in his speech that the relationship between the shipbuilding industry and the steel industry is inseparable. Thanks to the strong support of my country's steel companies, both the product output and quality of my country's shipbuilding ship plates have basically met the needs of the rapid development of domestic shipbuilding companies. , more than 95% of my country's shipbuilding steel has been replaced by domestic production, and only a small amount of products still need to be imported. In recent years, in line with the high-quality development of the shipbuilding industry, steel companies have continued to explore the field of steel for high-tech, high-value-added ship products, and carried out joint research with shipbuilding companies in the field of high-end varieties, realizing the realization of thin-plate liquefied natural gas (LNG) shipboard Invar steel , duplex stainless steel for ultra-large chemical ships, low-temperature steel for marine engineering equipment, crack arrest steel for large container ships, thin plates for luxury cruise ships and other products, breakthroughs in research and development and industrial application, helping my country's shipbuilding companies seize international market share and improve international competitiveness. It has provided support and made great contributions, and also helped our country's shipbuilding industry surpass major competitors such as Japan and South Korea, and achieve the great achievement of a major shipbuilding country. Since 2021, under the combined effect of multiple factors, the global shipbuilding industry has ushered in a new upward cycle. With the support of the steel industry, China's shipbuilding industry has achieved effective improvement in quality and steady growth in quantity.

He said that currently, the steel industry and the shipbuilding industry are in different industrial cycles. During such a critical period, both parties must further strengthen communication, understanding, and cooperation. We hope to continue to deepen our strategic partnership with steel companies, give full play to our respective advantages, jointly explore new fields and new industries, provide new momentum for the steady growth of the two industries, and inject new energy into the high-quality development of the two industries.

Pictured is He Qingwei

In his speech, He Qingwei introduced Yingkou City's efforts to make the steel pillar industry bigger, better, and stronger, and to accelerate the creation of a 100-billion-dollar steel and metallurgical industry cluster. Over the years, Yingkou City has relied on strategic resources such as ports and private development advantages, and led by companies such as Japan Steel Yingkou Medium Plate and Anshan Iron and Steel Bayuquan, to vigorously promote the chain layout, cluster development, and energy storage of the steel industry. Steel and deep processing have become the One of the city's five leading industries, it will complete an output value of 87.77 billion yuan in 2022, accounting for 40% of the industrial scale above designated size. It is a powerful engine for the city's high-quality economic development.

Pictured is Feng Weifu

In his speech, Feng Weifu introduced the development of Rigang Yingkou Medium Plate Co., Ltd. He said that in recent years, as steel production has reached its peak, the steel industry is in a critical period of structural adjustment, transformation and upgrading. In this context, Risco Yingkou Medium Plate takes medium and thick plates as the company's development cornerstone, takes specialization as the company's development goal, and creates five first-class characteristics, namely, establishing a first-class medium plate enterprise, creating a first-class ship plate brand, and configuration First-class line equipment, building a first-class service system, and possessing first-class port resources.

Pictured is Zhang Ming

In his speech, Zhang Ming introduced the efforts and achievements of the Shanghai Futures Exchange in adhering to the purpose of serving the real economy. As of now, the steel products listed on the Shanghai Stock Exchange include 4 futures and rebar options including rebar, wire rod, hot-rolled coil and stainless steel, providing risk management tools for the upstream and downstream of the industrial chain. The enthusiasm of enterprises for hedging has increased significantly. Many shipping companies have begun to use futures derivatives to manage price risks and have achieved good results. In the next step, the Shanghai Futures Exchange will further enhance the functions of the futures market from three aspects: first, focusing on industry needs, improving product supply and optimizing business mechanisms; second, focusing on entity enterprises, deepening talent cultivation and enhancing consensus among all parties; third, focusing on price formation mechanism to implement front-line supervision responsibilities and promote effective performance of functions.

The picture shows Liu Jing attending the meeting

The picture shows Wang Yingsheng presiding over the morning meeting

The picture shows Tan Naifen presiding over the afternoon meeting

The meeting held a signing ceremony for a long-term supply agreement between steel companies and shipbuilding companies. Witnessed by Luo Tiejun, Wu Qiang, and He Qingwei, nine shipping companies including China State Shipbuilding Co., Ltd. and nine steel companies including Anshan Iron and Steel Co., Ltd. signed long-term purchase agreements. This year's conference resulted in a total of 23 signings, 13 more than the first conference, and cooperation between the two industries has been further strengthened.

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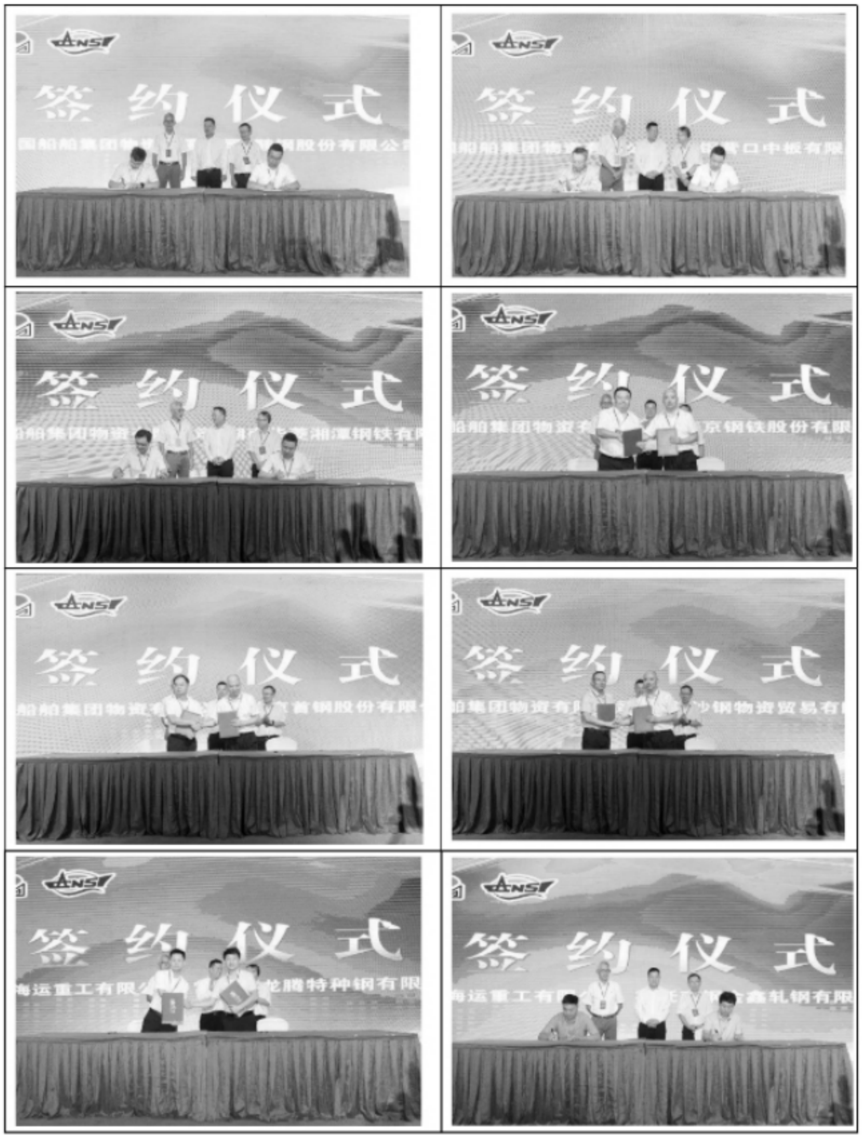

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The picture shows 23 shipbuilding company-steel company signing ceremonies

The conference brings together leading and backbone enterprises in the steel and shipbuilding industries, and has a significant influence on the safety, tightness and sustainability of the steel-shipping industry chain. Based on this advantage, the meeting specially set up a communication and interaction session between the two companies. Representatives of enterprises from both sides discussed how to strengthen cooperation in the upstream and downstream industrial chains, cultivate suppliers and maintain customers, enhance the security of the industrial chain, and achieve mutual benefit and win-win results.

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The picture shows the exchange and interaction session between representatives of shipbuilding companies and steel companies
(arranged in order of speeches)

At the meeting, Li Hao, general manager of Beijing Gangyan New Material Technology Co., Ltd., made a report on the quality capability classification of steel products. It is understood that under the guidance of the Ministry of Industry and Information Technology, the Iron and Steel Association, the Shipbuilding Association and the Steel Research Institute jointly carried out research on the quality classification of steel plates for ships and offshore engineering. The quality capability classification rankings of steel plates for ships and offshore engineering were released by enterprises in the two industries. recognized. Li Hao said that the next step will be to strengthen in-depth integration with the upstream and downstream of the industry, move from the single data source of production companies to the multi-data sources of enterprises + users, and continuously improve and enhance the applicability of quality capability classification results.

Pictured is Li Hao

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Supply and demand are the focus of market attention. At the meeting, Tang Hongxue, deputy director of the Market Research Department of the Steel Association, and Cao Bo, deputy director of the Statistical Information Department of the Shipbuilding Association, respectively introduced the development of the steel market in 2023 and the shipbuilding market in 2023 in the form of special reports Development situation, sorting out the contradiction between supply and demand and analyzing market opportunities for steel and shipbuilding companies.

The picture shows Tang Hongxue

Pictured is Cao Bo

Focusing on a series of hot issues in the ship-steel industry chain, the meeting arranged special speeches. Hu Shanfu, Business Manager of the Materials Department of Guangzhou Shipbuilding International Co., Ltd. introduced the technical requirements for steel based on thin plate intelligent manufacturing. Dr. Song Zhonghua of Baowu Group made suggestions on the response measures to the carbon border tax (CBAM) in the steel industry. Tian Xueyan, an expert from Ernst & Young Accounting Firm A detailed analysis was made of corporate hedging accounting practices and key risk control points. Minmetals Group expert Li Aikun introduced the experience of futures hedging from the perspective of steel futures providing risk management services to the industry.

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Pictured is Hu Shanfu

The picture shows Song Zhonghua

Pictured is Tian Xueyan

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Pictured is Li Aikun

Leaders from government agencies, representatives from leading enterprises in the steel and shipbuilding industries, financial futures companies, and media reporters attended the meeting. After the meeting, the participants visited Rigang Yingkou Medium Plate Co., Ltd.

The picture shows a group photo

The picture shows the participants visiting the Yingkou medium plate of Japan Steel

Editor: Zhang Yutian   Source: China Metallurgical News-China Steel News Network

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2023船舶用钢供需座谈会召开——落实稳增长工作方案 推进产业链协同发展

2023-09-11 09:26:00

中国冶金报 中国钢铁新闻网
记者 吕林 报道
特约通讯员 蓝义高 摄影

日前，工业和信息化部、国家发展改革委、财政部、自然资源部、生态环境部、商务部、海关总署等七部门联合印发了《钢铁行业稳增长工作方案》，提出了稳增长目标和与船舶行业等下游行业加强合作的措施。为进一步深化钢铁与船舶产业链供需衔接，促进行业转型升级、高质量发展，9月7日，由中国钢铁工业协会（以下简称钢协）、中国船舶工业行业协会（以下简称船协）主办，日钢营口中板有限公司承办，上海期货交易所、上海钢联协办的2023船舶用钢供需座谈会在辽宁营口召开。

图为会议现场

钢协党委常委、副会长骆铁军，船协常务副会长吴强，营口市人民政府市委常委、副市长何庆伟，上海期货交易所副总经理张铭，日钢营口中板总经理凤维富到会讲话或致辞。上海钢联电子商务股份有限公司副总裁刘静等嘉宾出席会议。钢协总经济师王颖生、船协副秘书长谭乃芬主持会议。

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品牌联盟　关闭

图为骆铁军

骆铁军在讲话中表示，这是钢协和船协第三次召开上下游供需座谈会，加大了供需对接的力度和大家的互相了解，带动了新产品的开发和产业链的协同，取得了较好的合作成果，也为钢铁行业和其他下游行业的合作树立了一个典范。本次会议是对首届“常熟会议精神”的延续和深化，也是对《钢铁行业稳增长工作方案》的贯彻落实。

骆铁军指出，今年以来，钢铁行业运行环境较为严峻，企业生产经营面临产量大于需求、钢材价格下跌、原燃料成本上升等挑战，整体经济效益处于近年来较低水平。钢铁行业对市场环境变化的长期性和必然性有了更加现实、更加清醒的认识，从近两个月的行业运行情况来看，为实现供需动态平衡所采取的产量调控措施正在显效，经济效益趋稳向好。钢铁行业有信心做好后续的工作，号召钢铁企业按照供需合理安排自己的产量，将更多的精力花在品种、质量和服务下游行业的深度上。

骆铁军谈到，现在我国拥有中厚板产线70余条，产能超过1亿吨，其中宝武、鞍钢、沙钢、湘钢、日钢营口中板、南钢共拥有7套五米轧机。2021年，大宗原材料市场大起大落，钢铁和船舶行业通过签订长期协议等方式积极合作，平抑了一定风险。2022年以来船舶用钢稳定增长，在一定程度上支撑了钢材需求。随着我国船舶行业高附加值船型订单比例上升，船用高端钢材供给能力也不断提高，大型集装箱船用止裂板全部实现国产替代，化学品船用双相不锈钢国产化率由不足50%提高至90%以上，国产高锰钢罐项目顺利开工，国产薄膜型LNG船罐专用不锈钢通过专利公司认证，钢铁—船舶上下游产业链供应链安全和质量水平明显提升。他同时指出，在钢铁与船舶两个行业进一步加强紧密合作的同时，仍有许多提高的空间，例如船舶企业智能化升级对钢材质量稳定性和定制化配送提出更高需求。他希望，两行业共同消除供需衔接中不利于双方合作和高质量发展的弊端，继续加强合作，携手实现产业链共赢，共同走好高质量发展之路。

图为吴强

吴强在讲话中表示，船舶工业和钢铁工业的关系密不可分，正是得益于我国钢铁企业的大力支持，我国造船用船板无论是产品产量还是质量都基本满足了国内船企快速发展的需求，我国95%以上的造船用钢实现了国产化替代，仅有少量产品还需要进口。近年来配合船舶工业高质量发展，钢铁企业在高技术、高附加值船舶产品用钢领域不断探索，与船舶企业在高端品种领域开展联合攻关，实现了薄板型液化天然气(LNG)船用殷瓦钢、超大型化学品船用双相

不锈钢、海洋工程装备用低温钢、大型集装箱船用止裂钢、豪华邮轮用薄板等产品研发突破和产业化应用，为我国造船企业抢占国际市场份额、提高国际竞争能力提供了支撑、做出了巨大贡献，也帮助我国船舶工业超过日本和韩国等主要竞争对手，实现了造船大国的伟大成就。2021年以来，在多重因素的共同作用下，全球船舶工业迎来了新一轮的上升周期，中国船舶工业在钢铁工业的支持下，实现了质的有效提升和量的稳步增长。

他表示，当前，钢铁行业和船舶行业正处于不同的产业周期之中，在这样关键的时期，双方更要进一步加强沟通、加强理解、加强合作。希望继续深化与钢铁企业战略合作关系，充分发挥各自的优势，共同开拓新领域、新产业，为两行业稳增长提供新动能，为两行业高质量发展注入新能量。

图为何庆伟

何庆伟在致辞中介绍了营口市做大做优做强钢铁支柱产业、加快打造钢铁冶金千亿级产业集群的情况。多年来，营口市依托港口等战略资源和民营发展优势，以日钢营口中板、鞍钢鲅鱼圈等企业为龙头，大力推动钢铁产业链式布局、集群发展、蓄能成势，钢铁及深加工已成为该市五大主导产业之一，2022年完成产值877.7亿元，占规上工业比重达到40%，是全市经济高质量发展的强大引擎。

图为凤维富

凤维富在致辞中介绍了日钢营口中板有限公司的发展情况。他表示，近年来，随着钢铁产量的达峰，钢铁行业正处于结构调整转型升级的关键期。在此背景下，日钢营口中板以中厚板为公司的发展基石，以专业化为公司的发展目标，打造5个一流的特色，即创办一流中板企业、打造一流船板品牌、配置一流产线装备、建设一流服务体系、具备一流港口资源。

图为张铭

张铭在讲话中介绍了上海期货交易所坚持以服务实体经济为宗旨所做出的努力与成效。截至目前，上期所上市的钢材类品种有螺纹钢、线材、热轧卷板和不锈钢等4个期货和螺纹钢期权，为产业链上下游提供风险管理工具。企业套保积极性显著提升，已有多家船舶企业开始使用期货衍生品管理价格风险，并取得了较好的效果。下一步，上期所将从三个方面进一步提升期货市场功能：一是围绕行业需要，完善品种供给，优化业务机制；二是围绕实体企业，深化人才培育，增进各方共识；三是围绕价格形成机制，落实一线监管职责，促进功能有效发挥。

图为刘静出席会议

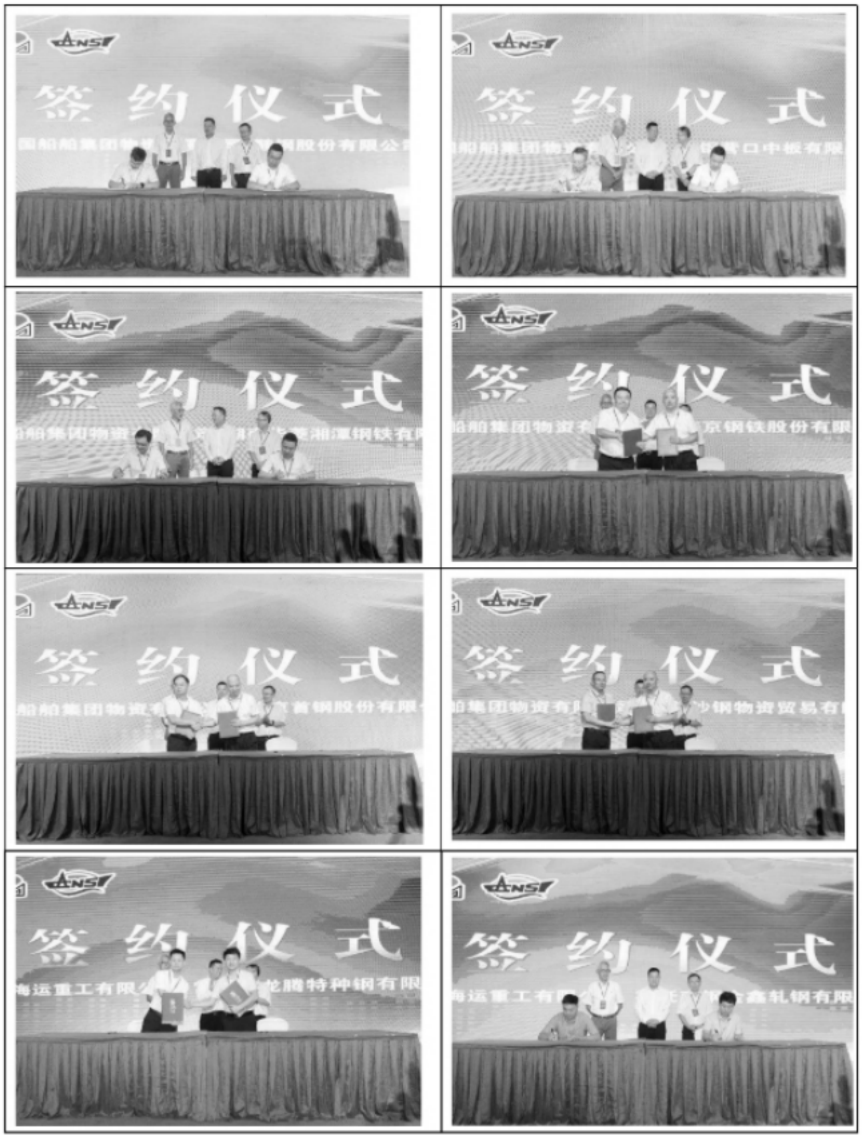
关闭

图为王颖生主持上午的会议

图为谭乃芬主持下午的会议

会议举行了钢企—船企长期供货协议签约仪式。在骆铁军、吴强、何庆伟的见证下，中国船舶集团物资有限公司等9家船企同鞍钢股份有限公司等9家钢企签订了长期采购协议。今年会议共促成23场签约，较第一届会议增加了13场，两行业合作得到进一步加强。

关闭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关闭

图为23场船企—钢企签约仪式

会议齐聚了钢铁、船舶行业的头龙、骨干企业，对于钢铁—船舶产业链的安全性、紧密性、可持续性具有重大的影响力。基于这一优势，会议特别设置双方企业交流互动环节。双方企业代表共同围绕如何加强上下游产业链合作、做好供应商培养和客户维护、增强产业链安全、实现互利共赢展开讨论。

 中国船舶集团物资有限公司副总经理李胜光发言	 广船国际有限公司物资部部长周圣平发言
 沪东中华造船(集团)有限公司配套部部长茅于东发言	 中船黄埔文冲船舶有限公司物资部部长宋义彬发言
 大连船舶重工集团有限公司物资部副部长徐海波发言	 中国船舶集团青岛北海造船公司物资部部长王伟发言


中船澄西船舶修造有限公司物资部副部长马博发言


江苏扬子江船业集团公司副总经理何明晖发言


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首钢集团首钢京唐公司副总经理周德光发言

图为船企、钢企代表交流互动环节

（按现场发言顺序排列）

会上，北京钢研新材科技有限公司总经理李灏做钢铁产品质量能力分级报告。据了解，在工信部的指导下，钢协、船协和钢研院联合开展了船舶及海洋工程用钢板质量分级研究工作，发布的船舶与海工用钢板质量能力分级排名得到两个行业的企业高度认可。李灏表示，下一步将加强与行业上下游的深度融合，由生产企业的单一数据源向企业+用户的多数据源的方向推进，不断完善并增强质量能力分级结果的适用性。

图为李灏

供给与需求是市场关注的焦点，会上，钢协市场调研部副处长汤宏雪、船协统计信息部副主任曹博分别以专题报告的形式介绍了2023年钢铁市场发展情况和2023年造船市场发展情况，为钢铁和船舶企业梳理供需矛盾，分析市场机会。

图为汤宏雪

图为曹博

围绕船舶—钢铁产业链上的一系列热点问题，会议安排了专题发言。广船国际有限公司物资部业务经理胡善付介绍了基于薄板智能制造的钢材技术要求，宝武集团宋中华博士就钢铁行业碳边境税（CBAM）的应对措施提出了建议，安永会计师事务所专家田雪彦具体分析了企业套期保值会计实践及风控要点，五矿集团专家李爱坤则从钢材期货为产业提供风险管理服务的角度介绍了期货套保的经验。

图为胡善付

图为宋中华

图为田雪彦

图为李爱坤

来自政府机关的领导，钢铁、船舶行业的头部企业和金融期货公司的代表以及媒体记者参加了此次会议。会后，与会人士参观了日钢营口中板有限公司。

图为合影

图为与会人士参观日钢营口中板

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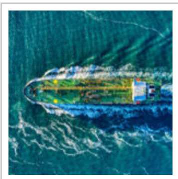
Powerful growth in the China-owned fleet

in International Shipping News 16/06/2022



In recent years the fleet of merchant ships owned by companies based in China has continued to grow strongly. This performance reinforced an already entrenched upwards trend, and signs point to further advances in the future.

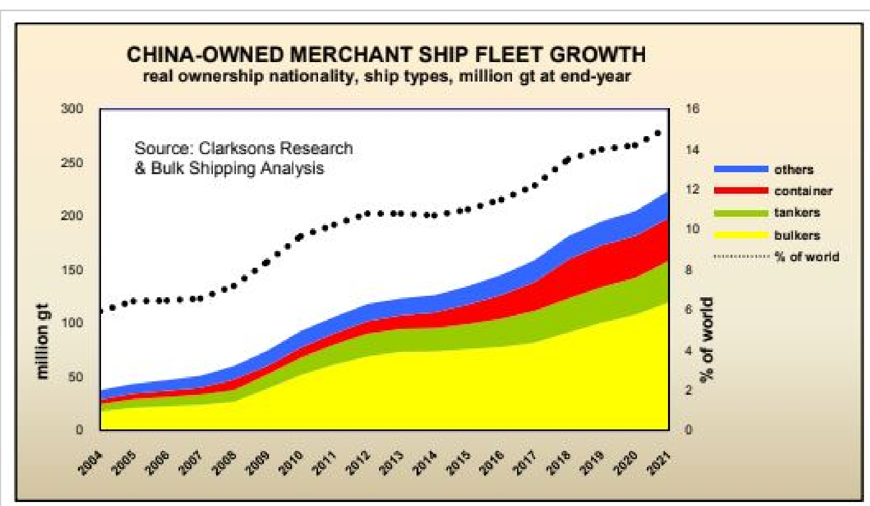
Expansion of the China-owned fleet of bulk carriers, tankers, container ships, gas carriers and other vessel types has enabled rising shares of seaborne imports to and exports from China to be carried. Becoming less dependent on foreign shipowners in these trades has been an aim of national transport policy. Involvement of nationally-owned ships in trades where China is not an importer or exporter ('cross-trades') also was facilitated.

Merchant ship fleet enlargement propelled China into second place among the world's shipowning countries. For many years Japan was number two, measured by cargo-carrying capacity, with Greece remaining by far the largest. After overtaking Japan, future growth in China's capacity may reduce the gap between the two biggest fleets.

An upwards trend

From around one-twentieth of the world total in the early 2000s, the China-owned merchant ship fleet now comprises about one-seventh, following remarkable growth over two decades. Bulk carrier capacity is still the largest component after growing strongly. All the other categories – tankers, container ships, and a wide range of additional vessel types – have seen rapid increases at differing rates.

During the past decade the capacity of the China-owned merchant ship fleet has more than doubled. According to data compiled by Clarksons Research, based on gross tonnes as a common measurement for all vessel types, the total at the end of 2011 was 106.0 million gt, rising to 223.7m gt at end-2021. This 111 percent increase resulted from an annual average growth rate of 7.8 percent. The trend is illustrated by the graph.



Variations in annual increases often have been a feature. After a period of five years from 2008 to 2012 when annual rises of between 12 and 25 percent were recorded, an abrupt slowdown was seen. In 2013 and 2014 growth was 4 percent and 2 percent respectively. Since then, in the

WEEKLY DRY TIME CHARTER ESTIMATES

ALIBRA Shipping Limited — Updated We

DRY TIME CHARTER ESTIMATES ($/pdpr)

PERIOD	4/6 MOS		1 YR		
SIZE	ATL	PAC	ATL	PAC	ATL
HANDY (38k dwt)	13,000	12,000	13,250	13,500	12,000
SMAX/ULTRA	16,000	15,500	15,500	13,500	14,250
PANA/KMAX	19,000	18,000	17,750	17,000	15,250
CAPESIZE	26,500	26,500	25,250	25,250	22,000

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WEEKLY TANKER TIME CHARTER ESTIMATES

past seven years from 2015 to 2021, an acceleration to growth rates varying within a 5 to 14 percent range unfolded.

Merchant ship fleet enlargement during the past seven years totalled 97.4m gt, from 126.3m gt at end-2014, to the 223.7m gt total at the end of 2021. Almost half of the overall fleet expansion during the period was comprised of bulk carriers, including ore carriers (47 percent). About one quarter was container ships (26 percent), followed by tankers (17 percent) and other vessel types (9 percent).

Acceleration in 2021

Rapid growth in the China-owned bulk carrier and tanker fleets contributed to accelerating merchant fleet capacity expansion during 2021. The entire fleet of all ship types increased last year by almost 19m gt or 9.3 percent. About three-fifths of the incremental capacity was comprised of bulk carriers, with a 11 percent increase. Tankers comprised over a fifth of extra capacity, growing by 12 percent, while container ships and other types contributed the remainder.

Higher ordering of new tonnage at shipbuilding yards in the two previous years, by owners based in China, was reflected in a newbuilding deliveries upturn in 2021. These deliveries rose by 5.2m gt or 66 percent, reaching 13.2m gt. Another influence boosting fleet growth was a parallel upturn in ships purchased second-hand, rising by 4.9m gt (51 percent) to 14.5m gt. These additions were partly offset by a stable scrapping volume at just over 1m gt, accompanied by a rise in sales on the second-hand market which increased four-fold to a record high level of just under 8m gt.

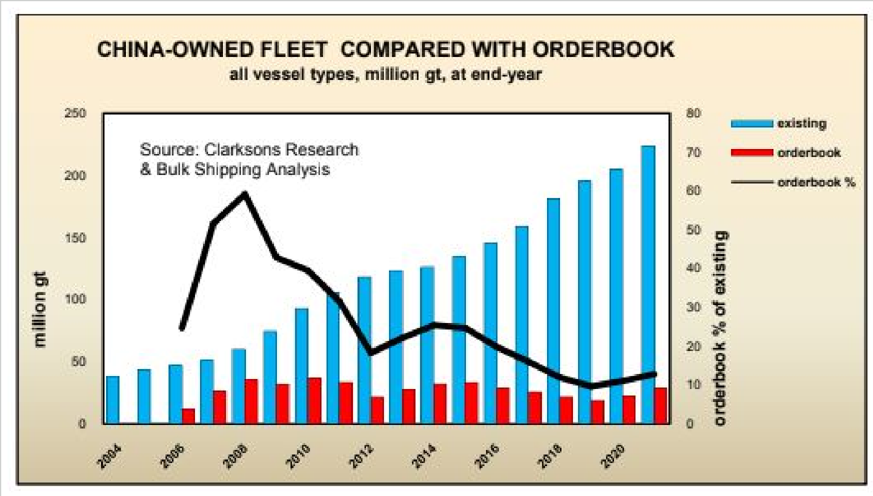
This combination of influences affecting last year's China-owned fleet evolution illustrates how the impact of new ship capacity entering the fleet is often modified by several other changes. In 2021 extra purchases of second-hand ships boosted the fleet almost as much as the increase in newbuilding deliveries. Moreover, although sales for scrapping were unchanged at a relatively low level, sales on the second-hand market increased to offset a large part of the additional capacity joining the fleet.

Future new fleet capacity

The delivery schedule of newbuildings joining the fleet is not always a totally reliable indicator of the future volume and timing of capacity additions, although it is a useful approximation. Delivery timing sometimes changes, compared with the scheduled pattern recorded, due to delays and postponements. Other aspects, cancellations, or orders 'converted' to another ship type, typically are fairly minor features.

Over the past three years an upturn in newbuilding orders by shipowners based in China unfolded, a consequence of which was an expanding orderbook (as deliveries of ships previously contracted were outpaced by the incoming volume of new orders). The next chart shows merchant ship newbuildings on order at the end of each year, in volume and as a proportion of the existing China-owned fleet, the tonnage of which is also shown. An orderbook recovery in 2013-2015 after a previous decline was followed in the 2016-2019 period by a resumed downwards trend. Subsequently, during 2020 and 2021, the orderbook increased.

At the end of 2019 the orderbook for merchant ship newbuildings placed by owners in China fell to 18.8m gt, the lowest volume since 2006, equivalent to a relatively low 9.6 percent of the existing China-owned fleet of ships. Over the next two years the orderbook total rose by almost ten million tonnes to reach 28.6m gt at end-2021, equivalent to 12.8 percent of the existing fleet's capacity. Within this end-2021 total 9.0m gt was scheduled for delivery during 2022, followed by12.3m gt in 2023.



The newbuilding delivery schedule for 2022 suggests that actual deliveries will be well below the total seen last year, assuming that the scheduled volume is a fairly reliable calculation. By the beginning of any year limited time is available for additional orders to be placed for delivery in the twelve months ahead. Typically there is insufficient time available to complete construction, while often shipyard berths are not available due to existing orders being built. Consequently the 2022 scheduled figure (of 9.0m gt) probably is a valid guide, surmising that there are no or few unrecorded orders. However, there is potential for the 2023 total of 12.3m gt to rise, amid owners becoming more positive about adding new capacity.

Among newbuildings on order for owners in China, several categories of large ships are a feature. An especially prominent category is container ships of between 14,000 twenty-foot equivalent units and 24,000 teu. At the beginning of this year, 5 ships in this size group were scheduled for delivery during 2022, followed by 28 in 2023 and 30 in 2024 and later years. In the large bulk carrier category, orders for 210,000 dwt newcastlemax ships numbered 9 scheduled for delivery this year, followed by 7 in 2023 and 4 in 2024 and later. Three guaibamax 325,000 dwt ore carriers to be delivered in 2022 were also recorded. In the tanker very large crude carrier (vlcc) category, 5 ships of 300-307,000 dwt were scheduled for delivery this year. Liquefied natural gas carriers of 174,000 cubic metres numbered 6 for delivery from 2022 onwards. More orders for large merchant ships have been added in the past few months.

Ship employment perspectives

Specific parts of the China-owned merchant ship fleet's evolution are linked to identifiable commodities, cargoes and trade routes, although the linkage sometimes appears to be flexible. The huge scale of crude oil, gas and iron ore imports into China, in particular, have stimulated the expansion of the country's vlcc, gas carrier and ore carrier fleets. Exports and imports of manufactured and semi-finished goods provided an incentive for the growth of China's container ship fleet. Other examples are prominent.

Often it seems fairly clear that additions to the fleet are or will be wholly or mostly employed in trades where China is at one end of the route or routes involved, either as importer or exporter. A full analysis is not feasible because of limited information about intentions or contracts. But available observations of ships' geographical employment patterns and actual movements provides substantial confirmation of how and where specific types and sizes are employed.

Future changes in trade volumes and patterns could have an impact on how the fleet evolves. In the import trades, after China's commodity imports saw a strong upwards trend over an extended period of years, there are now tentative signs of growth slowing or ceasing in parts. One element is iron ore imports – exceeding one billion tonnes annually – which appear to have reached a plateau. Within this trade, ore imports from Brazil, use of China-owned 400,000 deadweight valemax ore carriers has expanded, and guaibamax 325,000 dwt ore carriers are still being added. Whether many more newbuildings for this or other trades will be ordered is not clear but, arguably, potential exists for China-owned ships to increase market share in several commodity trades even if volume growth has lost momentum.

It seems likely that numerous ships will be mostly employed in the country's import or export movements, or alternatively in the massive China coastal trades. Another source of employment is the international cross-trades, where China is not a voyage destination or origin. How the trend of China-owned ships' involvement in this trade category will evolve during future years is difficult to assess, but it could prove substantial. Although the strategic drivers are not altogether clear, observed patterns point to continuing employment in the cross-trades, influenced by global market trends, freight rates and profitability.

Expectations of fleet growth

Support for newbuilding orders may be derived from replacing older vessels in the China-owned fleet. Currently, the proportion within the age group of 25 or more years varies among the main ship types, according to calculations by Clarksons Research, based on the number of vessels. While in the tanker fleet the older 25+ age proportion is minimal, at 1 percent, larger proportions are recorded in bulk carriers (7 percent) and container ships (9 percent). These percentages seem to indicate potential for additional replacement orders to emerge.

Growth in the China-owned fleet in 2022 and further ahead will depend partly on the number and scale of changes in other influences. As seen in the past twelve months, second-hand ship purchases greatly augmented capacity. Also, even though scrapping was a minor element, ship sales into the second-hand market provided a large offset, limiting the fleet growth facilitated by newbuildings and second-hand purchases. Estimates of future changes are speculative, because many unpredictable influences affect decisions by owners.

Further expansion of the China-owned fleet arguably is likely over the next several years. But the evidence base is quite thin, and such expectations tend to reflect recent trends and observed characteristics. One possible outcome is that future merchant ship fleet expansion may not maintain the average 8.5 percent per annum seen in the past seven years from 2015 to 2021.

Ideas about the China-owned merchant ship fleet's future trend are based upon a few solid signs, coupled with assumptions and speculation. Nevertheless continued, perhaps robust expansion seems a plausible expectation. This view is supported by official and unofficial narrative about intentions, emerging over a number of past years. It also reflects the more tangible indicator of newbuildings on order and the likely pattern of deliveries, assuming all vessels ordered will be delivered. Replacements for older tonnage in the existing China-owned fleet could ensure that a firm foundation for future fleet growth is reinforced.
Source: Article by Richard Scott, Managing Director, Bulk Shipping Analysis and visiting lecturer, London Universities for Hellenic Shipping News Worldwide

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Week in China

Flying the flag

Fifty years ago Aristotle Onassis was probably the world's best-known shipowner. Such was the success of the Greek-Argentine tycoon that his wealth helped to bring the term 'shipping magnate' into popular parlance and Onassis cemented his celebrity by marrying Jackie Kennedy, the widow of the American president.

Today's candidates for the title of world's largest shipowner are a lot less glamorous, although China Cosco Shipping has a claim with the world's biggest fleet of tankers and bulk carriers.

Other contenders are the shipping finance subsidiaries of the Chinese banks, which have become major owners themselves over the last five years. ICBC Financial Leasing is the largest, leasing out more than 320 vessels in a portfolio worth at least $9 billion.

Indeed China's merchant fleet has more than tripled in tonnage terms over the last decade and the implications for the rest of the shipping world could be momentous as Beijing bids for further control over the maritime sector.

Who's at the helm?

Working out the world's shipowners by nationality is a challenge: ownership is generally defined by the location of the parent company but the realities of a secretive and fast-moving sector mean that the final figures are always open to interpretation.

The Japanese fleet – the second largest – is a little easier to quantify as its vessels need to be flagged and controlled in Japan to qualify for domestic tax breaks.

Owners from Greece, the largest national grouping, can be harder to pin down – they might be living in Monaco or London, flagging their vessels in the Marshall Islands, and running their fleets from offices in Hong Kong or Singapore.

The ownership data for China is also complicated by whether to include Hong Kong-registered vessels. Nonetheless, the estimate from last year is that the Chinese have the world's third largest fleet at 9% of the world's tonnage, trailing the Japanese (13%) and the Greeks (16%).

At the head of the China-owned fleet is Cosco and China Merchants and the number of vessels under national control is growing rapidly, with a threefold expansion of Chinese ownership over the last decade to about 140 million gross tonnes (excluding Hong Kong-registered ships), according to Clarksons Research.

Taking control

Most of the Greek shipping firms are family-controlled, with a focus on vessels in the bulker and tanker sectors. Japan's ships are privately owned as well, although tax concessions from the government have been hugely influential in bolstering domestic ownership. In China the state plays a more direct role through the operational activities of majors like Cosco and the lending of the shipping finance subsidiaries at the state-owned banks. The Chinese owners are some of the biggest and best-capitalised, which makes them more active in the newbuild market, where they have been ordering a growing share of the largest vessels.

Smaller, independent owners have more of a presence in the secondary market in China, says Basil Karatzas, who runs New York-based Karatzas Marine Advisory. He describes owners of this type as well-connected businesspeople who buy dry bulk carriers and persuade their local steel mills to charter them for the supply of raw materials. "We've seen a lot of second-hand ships sold to Chinese customers in this way," he says. "A typical target is a 10-year old vessel in the $3 million to $7 million range, which is about twice its scrap value so it's not a hugely significant amount of cash to put at risk. If they can lock up a year's charter with a steel mill, the shipowners can cover most of their capital".

Nonetheless it is the orders for larger vessels that get more of the headlines and the average size of the ships in the Chinese fleet has almost doubled over the last decade, highlighting the deliveries of larger tankers, bulk carriers and container ships.

Contributing to the trend are diktats from the central government that more of the country's trade should be transported on ships owned by companies from China.

The first signal of the policy came in the oil industry, where China depends on imports for more than half of its consumption. Most of it arrives by sea and Beijing has been pushing for a larger tanker fleet for years, encouraging its shipping firms to buy bigger ships under the banner of "national oil, nationally carried".

State-owned operators like Cosco and China Merchants have responded enthusiastically, ordering significant numbers of VLCCs (very large crude carriers). Leading the charge is China VLCC, a subsidiary of China Merchant Energy Shipping, which was established just three years ago but is now the largest operator of oil tankers worldwide, with 40 vessels in operation and orders for 13 more. Cosco's fleet of the same type of vessels is only a little smaller.

Fifteen years ago, the Chinese owned about 2% of the world's oil tankers but today they control closer to 15% of the fleet and they have a greater share of the order book.

The strategy of establishing more control of how the key industrial commodities are transported has been similar for shipments of iron ore, where China's shipping interests clashed with Brazilian miner Vale over how iron ore would be shipped from Latin America (see sidebar). Vale eventually capitulated, selling most of the ships to the Chinese and leasing them back on long-term contracts. Last year the Chinese majors splashed out $3.5 billion on orders for 30 more of the mega-ships in what looks like an attempt to control more of the freight rates on the Brazil-China route into the future.

Financing the fleet

Another feature in how ownership of the world's merchant fleet is changing is ship finance, where the Chinese banks have become powerful players.

Until recently the European banks provided most of the loans, explains Jonathan Silver, head of Shipping at Norton Rose Fulbright in Hong Kong. But when the European lenders started backing away from the sector following the financial crisis a decade ago, the Chinese lenders began to offer more of the loans themselves.

Initially the support came from commercial banks like Bank of China and later from policy lenders, led by China Development Bank. But in 2013 the banks started taking a back seat to a new breed of leasing company that finances the construction of new ships and then leases the finished vessels back to their operators at a profit.

"Shipowners are using sale-and-leasebacks to refinance existing loans and to pay for contracts with yards for newbuilds," Silver explains. "The customer might put down 10% of the ship's price in equity but it then novates [substitutes] the contract, getting the capital from the lessor to meet the payments for building the vessel. The lessee pays off the principal and the interest over the duration of the lease and at the end of the period there is usually some kind of purchase option."

Silver says that lease finance has flourished because shipowners have been finding it harder to get bank loans. As state-owned enterprises, the lessors don't have the same difficulties finding finance and they enjoy much lower costs of capital than traditional owners, who are seen as more of a credit risk.

The lessees have welcomed the new arrangements because the leasing deals generally incorporate higher loan-to-value ratios than bank loans and they are structured over longer tenors that stretch out the repayment schedules.

The lessors are split into two main groups. Larger shipbuilders like CSSC have leasing divisions that provide funding for orders from their yards but most of the ship financiers are subsidiaries of the main banking groups, focusing purely on financial returns. Remarks in March from Mao Wanyuan, a director at the China Banking Regulatory Commission, suggested there were 23 financial institutions providing ship lease finance, with a portfolio of 989 vessels valued at Rmb114 billion ($16.5 billion). ICBC Leasing is the biggest, with Minsheng Financial Leasing and Bank of Communications Financial Leasing also significant players.

Almost all of the early leases had a national flavour involving Chinese yards or Chinese counterparties, and the lessors prioritised longer-term contracts with reliable customers, such as the biggest miners and steel firms. More recently they have started to do business with parties lacking the same national connection and they have been coming into contact with smaller, independent customers – potentially much riskier propositions. Another feature of the landscape is an increase in 'operating leases' in which the lessor retains ownership of the vessels at the end of the contracts. The industry is so new that few of these leases have reached their natural conclusions, so the industry is waiting to see whether the Chinese can manage their multi-billion dollar portfolios profitably.

The gathering storm

Karatzas argues that shipping is set for a period of transformative change as the Chinese start to assert more control. One trend is that more of the country's international trade will be carried on Chinese vessels in the same way that a greater share of its imports of oil and iron ore have shifted to Chinese operators. Another is that commercial capacity is going to concentrate around larger lines and shipyards, some of which will emerge as national champions.

"Previously China's shipping sector was relatively unstructured with a lot of duplication. There were five companies competing in tankering, another five battling in the container trade, and five shipyards chasing every new contract," he claims. "But that's starting to change as the government brings the bigger names together. We are seeing it in the way that Cosco is being built up and in the campaigns to close the weaker shipyards."

In the bigger picture this is part of the process in which the Chinese are moving from their position as the primary customer of the industry into a role in which they are a leading supplier. And the opportunity is growing for China's shipping firms to play the national card, especially when state-controlled customers are involved. "If a vessel owned by a company from another country is bidding with a Chinese competitor for a contract, who is going to win the business?" Karatzas asks. "I think it's logical to assume that the government is going to want the Chinese ship to be preferred, whether that is stated openly or not."

The broader argument is that Chinese firms are taking control of the largest vessels, buying stakes in more of the world's ports, and benefiting from more financial and political support from their government, much of it under the aegis of Beijing's backing for Belt and Road infrastructure investment.

Karatzas also says that too many of shipping's traditional participants don't seem to appreciate how much the fundamentals are changing. Many of the world's shipowners have made most of their returns by trading the asset values of their vessels rather than making a profit from operating them. Their strategy is to try to time the economic cycle, buying ships during downturns for cents on the dollar and managing them through a period of negative cash flows as they wait for better times. When the value of the vessels increases, they sell for a profit.

The warning from Karatzas is that shipowners are adopting a business-as-usual approach and basing their bets on picking up vessels at bargain prices and waiting for the recovery in values.

But that's a strategy that may not survive as the Chinese accumulate larger fleets of their own that seem set for dominant positions across many of the world's trade flows. "All of these new vessels will take a lot of the volatility out of the market for the independent shipowners and the strategy of buying low and selling high becomes a lot less viable," he predicts.

EXHIBIT 74

Beijing's Energy Security Strategy: The Significance of a Chinese State-Owned Tanker Fleet

by Andrew Erickson and Gabe Collins

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Abstract: *Chinese shipping firms are aggressively expanding their oil tanker fleets. Although China's state energy firms support national energy security goals in their rhetoric, and China's state shipbuilders are striving to lead global production, commercial forces will almost certainly determine how these ships are employed. However, energy security considerations may have some influence in determining China's naval force structure. The majority of new tankers being built for Chinese shipping firms will fly China's flag, which helps set a legal basis for militarily protecting these vessels. As Chinese naval power and oil import dependency rise, security-minded factions in China's leadership may use the country's resource needs to justify further pursuit of blue water naval capabilities.*

The global oil shipping system transports oil from some of the world's most unstable areas. It has functioned through wars, hurricanes, embargoes, and canal closures. While commercial tanker operators engage in apolitical pursuit of profit, the U.S. Navy's maintenance of the freedom of navigation makes their operations possible. Now the People's Republic of China (PRC)'s rise as a commercial and military power over the past three decades is drawing renewed attention to a vital supply system that governments and private consumers around the world have long taken for granted.

Tanker Guide	
Panamax	50,000-80,000 deadweight tons of capacity (1 ton=7.33 barrels of oil)
Aframax	80,000-120,000 DWT
Suezmax	120,000-180,000 DWT
Very Large Crude Carrier (VLCC)	200,000-300,000 DWT
Ultra-large Crude Carrier (ULCC)	300,000-550,000 DWT

China's Oil Imports and Tanker Buildup

Maritime oil transport will be increasingly important to China in coming decades. China became a net oil importer in 1993, and a decade later was the second-largest-consuming and third-largest-importing nation. In 2006, China imported 40 percent of its oil, or 2.9 million barrels per day (bbl/day). The International Energy Agency estimates that by 2020, China could import around 7 million barrels/day of crude oil, or double today's imports. (The United States currently imports between 10 and 12 million barrels a day of oil and other products.) Over the next 15 years, China's share of world oil consumption will more than double, with imports possibly rising to 80 percent by 2025.[1] Most of the new demand will be met by seaborne oil shipments. Driven by growing concerns about oil insecurity, interested Chinese parties advocate the construction of a state-flagged and domestically constructed fleet of oil tankers capable of hauling up to three-quarters of Chinese oil imports by 2020.[2] Currently, PRC-owned tankers can transport less than 20 percent of China's oil imports. By comparison, Japanese tankers can haul over 90 percent of the energy consumed by that nation.

China's explosive post-1993 oil import growth surprised analysts and officials. Indeed, Beijing disbanded its Energy Ministry in 1993 because the leadership expected China to remain energy self-sufficient.[3] By 2003, the combination of the Iraq War, exploding domestic oil demand, and a leadership increasingly wary of reliance on the U.S.-led international economic system made oil security a central concern in China's energy debate.

Under President Hu Jintao, China is taking multiple steps to secure its oil supply. It is continuing to support the "go abroad" policy, in which Chinese national oil companies aggressively seek overseas oil fields. Beijing is also encouraging state oil companies to build joint venture refineries in China that will be fed with earmarked oil supplies from Saudi Arabia and Kuwait, thus providing guaranteed crude streams because oil exporters would not likely cut off oil to their own refineries. China is also enhancing "downstream" security by building a strategic petroleum reserve (SPR), expanding its internal and external pipeline networks, and boosting its refining capacity and ability to handle a wider range of crude oil grades.

Chinese shipping companies and shipyards are constructing a tanker fleet capable of hauling a substantial portion of Chinese oil imports. While efforts to ensure "upstream" security by defending oil fields overseas are precluded by China's inability to project power overseas, a larger tanker fleet

[1] Office of the Secretary of Defense, *Military Power of the People's Republic of China 2007*, Annual Report to Congress, p. 8.

[2] Qiao Enyan, "Petroleum Enterprises and Their Use in National Oil Security Strategy," *Modern Chemical Industry*, July 2005, pp. 9-12.

[3] Erica Downs, *Brookings Foreign Policy Studies Energy Security Series: China,* December 2006. p. 6.

will help develop what China regards as a critical, strategic industry and may help enhance the security of seaborne oil imports.

A large, state-flagged tanker fleet may help ensure the security of China's oil imports because it could deter a future adversary from interdicting China-bound tankers to pressure China's leadership. This would be particularly true in crisis situations short of a shooting war. The possibility also exists, however, that Chinese tanker operators may, in effect, be manipulating Beijing's oil insecurity for commercial gain. The key variable is the relationship between China's government and its national oil companies, which, if left to their own devices, typically put profits before politics.

Some observers characterize China's tanker buildup as a "centrally driven plan." This remains a point of contention. The authors' interviews with Chinese scholars familiar with the central government's current energy policies suggest that Beijing has no coherent plan at present for the creation of a national tanker fleet. However, articles from state-controlled Xinhua News Agency and China Daily have called for at least 60 percent of oil imports to be carried by Chinese shipping companies, which are now rapidly expanding their tanker fleets. Peng Cuihong, a senior official at the Ministry of Communications' Water Transport Department, has stated that China will build additional oil tankers to reduce reliance on foreign tankers.[4] Perhaps most significantly, a China Daily editorial states:

> . . . as the world's second largest oil importer, our overseas supplies are vulnerable. Inadequate ocean shipping capacity is a weakness that could prove fatal. We have cause for worry with around 85 percent of our entire oil imports transported by foreign-flag vessels. This is acceptable when business is just business. But we are not in a perfect world. The best way to minimize our vulnerability is to increase our preparedness for less than normal times. It is well within our reach to have more than 60 percent of our oil imports carried by Chinese-flag tankers, if that is what we need for oil security. The government should not economize on this strategic national interest. It has the financial resources to make it happen. The subsequent shipbuilding orders will in turn be a major boost to home shipyards. The authorities' idea to encourage more domestic shipping companies to enter the ocean-faring business is a good one. . . . We can also handle the technology. Several domestic shipyards have been building large crude oil carriers for years. We applaud the Ministry of Communications' determination to upgrade our self-reliance in ocean shipping. It is an insightful decision that will help guarantee a more comfortable position in the kind of special times we hope will never come.[5]

Despite its increasing economic influence and growing presence in energy-rich areas around the world, China's lack of an energy ministry, and hence a centralized policy process, makes it difficult for outsiders to understand the formation and content of its energy policies. This is particularly true

[4] "China Must Carry 60% of Seaborne Oil Imports on Local Shippers," *Xinhua Financial Network News*, June 14, 2007, "More Oil Tankers Talking to the Sea," *China Daily*, June 14, 2007.

[5] "Oil Security at Sea," *China Daily*, June 14, 2007.

when dealing with maritime energy transport security, which includes both economic and military concerns. Some Chinese scholars state that Beijing's energy policy is largely determined and articulated by National Development and Reform Commission, a branch of China's State Council. Premier Wen Jiabao reportedly devotes substantial time to energy issues as head of the State Council's Energy Leading Group, which solicits NDRC's inputs.[6] NDRC documents tend to focus on general aspects of national energy consumption and conservation, however; not maritime or military issues. A variety of institutions in China's People's Liberation Army Navy (PLAN)[7] apparently focus on the security aspects of Chinese energy and likely influence PLAN energy strategy, but are not easily accessible to foreign scholars.[8]

Analyzing China's energy transport industry will elucidate the larger and sometimes competing considerations that inform Beijing's quest for reliable energy supplies. China's oil tanker buildup appears to be driven primarily by commercial factors. The geopolitical implications of China's growing maritime trade and oil demand, however, necessitate careful examination of the factors behind China's desire to increase its presence in the world tanker market.[9]

Beyond Taiwan

China's future tanker-fleet will have significant geopolitical effects if China makes protecting oil and other resource shipments a major priority. China needs secure seaborne oil imports to sustain economic development, and at least some Chinese officials fear that the United States might seek to interrupt Chinese oil imports in a future conflict. Speaking at a Communist Party meeting on December 27, 2006, President Hu Jintao bluntly stated that China needs a "powerful" "blue water" navy prepared to uphold national interests "at any time."[10] This may entail creating a long-distance sea line of communication (SLOC) protection capacity.

Not surprisingly, China's 2006 Defense White Paper reiterates President Hu's assertions. This official appraisal of China's strategic environment and the proper responses thereto states that, "The impact of economic globalization is spreading into the political, security, and social fields . . . security issues related to energy, resources, finance, information, and international shipping routes are mounting."[11] Many Chinese naval analysts'

[6] Interviews in Beijing, December 2006; NDRC website, at www.eri.org.cn.

[7] These include the Naval Research Institute in Beijing, the Command and State college in Nanjing, and the Naval Submarine Academy in Qingdao.

[8] Interviews with Chinese scholars, 2007.

[9] Japan and Vietnam also appear highly interested in creating state flagged tanker fleets to protect oil shipments.

[10] "World Briefing/Asia; China: Hu Calls For Strong Navy," *New York Times*, December 29, 2006.

[11] *China's National Defense in 2006*.

writings echo the need to protect Chinese commerce far from Chinese shores.[12] Yet to date, China's naval modernization efforts have been oriented exclusively to defense of China's maritime periphery, and to solving the "Taiwan problem." Protecting maritime resource supply lines will be a key driver of PLAN development for contingencies "beyond Taiwan."

Some Chinese analysts advocate strengthening the PLAN so that it can intervene in trouble spots such as the Strait of Malacca.[13] Wu Lei, a prominent Chinese energy scholar from Yunnan University, explains that "fear that the U.S might cut [energy shipments] off as a result of the deterioration of Sino-U.S. relations over the Taiwan issue drives much of Beijing's modernization of its navy and air forces."[14]

Why an Expanded Tanker Fleet?

Despite future increases in oil imported overland, China will have to continue to rely on maritime transport for the majority of its increasing oil imports. This is partly for reasons of geography: 76 percent of Chinese oil imports in 2006 came from the Middle East and Africa. Over 85 percent of oil entering China came by sea.

Driven by fear that major naval powers could sever China's maritime oil supply lines, a growing contingent of Chinese analysts and policy-makers advocates major tanker fleet development. In August 2003, the Chinese government reportedly established a "Tanker Working Group."[15] By 2010, Beijing intends to transport 40-50 percent of its oil imports in PRC-flagged tankers. By 2020, it hopes to carry 60-70 percent. Chinese analysts predict that their country will need more than forty very large crude carriers (VLCCs) by 2010, each of which will be able to carry upwards of 1.5 million barrels of oil, in order to meet these goals.[16]

China's government considers shipbuilding to be a strategic sector.[17] Although security concerns are, to some extent, driving the tanker fleet

[12] Zhang Wenmu, "Sea Power and China's Strategic Choices," China Security, Summer 2006, pp. 17-31; Xu Qi, "Maritime Geostrategy and the Development of the Chinese Navy in the Early 21st Century," *China Military Science*, November 4, 2004, pp. 75-81.

[13] Li Jie, "China's Oil Demand and Sea Lane Security," *Naval & Merchant Ships*, September 2004, pp. 10-13.

[14] Wu Lei and Shen Qinyu, "Will China Go to War over Oil?" *Far Eastern Economic Review*, April 2006, p. 38.

[15] Yang Mingjie, ed., *Sea Lane Security and International Cooperation* (Beijing: Current Affairs Publishing House), 2005, p. 123. This assertion that has been disputed by a prominent Chinese scholar in an interview with one of the authors in Beijing, June 2007.

[16] Luo Ping, "National Oil, Nationally Hauled: China's Energy Security Insurance Line" (*Guoyou Guoyun: Zhongguo Nengyuan de Anquan Baozhang Xian*), *Maritime China*, February 2005, pp. 38-40.

[17] "Shanghai Shipbuilding Reaches for New Heights," *China Daily*, September 6, 2003.

buildup, its biggest short-term effects will probably be commercial. Japan and South Korea, in particular, face major competition from Chinese tanker builders. According to China State Shipbuilding Corporation's plan, by 2015 China will overtake Japan and South Korea to become the world's largest shipbuilder.[18] With nearly 30 percent of global tanker orders, China has already displaced Japan as the world's second largest builder of long-haul tankers.

The Malacca Dilemma

More than 85 percent of Chinese oil and oil-product imports pass through the Strait of Malacca. Chinese analysts fear that Malacca, and other bottlenecks such as the Strait of Hormuz, could easily be closed by terrorism, piracy, or the navies of the United States or regional powers in the event of a conflict over Taiwan or some other serious Sino-American crisis. They write that whoever controls Malacca also controls China's oil security, and that China's inability to secure Malacca would be "disastrous" for national security.[19]

To some Chinese analysts, the U.S. Navy is not the only threat to China's maritime energy supply lines. They worry that the rapidly modernizing Indian Navy could use its superiority vis-à-vis China's PLAN in the Indian Ocean to gain strategic leverage.[20] Beijing also distrusts Tokyo and worries about the capabilities of the Japanese Maritime Self-Defense Force (JMSDF), due to historical enmity; because Japan competes with China for energy resources in Russia and the East China Sea; and because the Japan is a major ally of the U.S. and cooperates closely on many strategic issues with India.

Despite its geographical funneling and the limited risks posed by terrorists and pirates, Malacca will remain a primary oil shipping route simply because of the cost (in additional time, fuel, and ships) of using alternative maritime routes such as the Lombok Strait, or even circumnavigating Australia. China will have to somehow accommodate these realities.

Commercial Factors

Beijing's relationship with tanker operators is best characterized as "the government builds the stage and the companies play." The government sets certain ground rules, but the companies enjoy substantial freedom to pursue their own commercial objectives within understood limits. This relationship and understanding probably extends to building national oil transport capability as well.

[18] "China's Shipbuilding Industry Booms," Xinhua Economic News Service, June 13, 2006.

[19] Li Shaojun, "Mahan's Sea Power and Its Influence on China's Oil Security Strategy," *International Forum*, July 2004, pp. 16-20.

[20] Chen Angang, "Malacca: America's Coveted Strategic Outpost," *Modern Ships*, December 2004, pp. 11-14.

Managers of shipping companies appear generally content to let the central government promote the shipbuilding/shipping industry at the broad policy level. In fact, a Chinese energy expert has told one of the authors, the idea of a Chinese national oil tanker fleet, while widely discussed in various fora, is a "rhetorical device for China's shipbuilding industry to justify more central government interest."[21] Yet, like state oil companies, shipping companies may resist government meddling in their daily operations. If chartering their tankers to foreign and private oil operators on an individual basis is more profitable than serving Chinese national oil companies in accordance with central policy directives, shippers will favor the more profitable approach. Similarly, if national oil companies find it more cost-effective to have foreign tanker operators haul their oil, they will oppose a forced marriage with Chinese shipping firms. Observers will be able to learn more about these relationships once Chinese state-owned shipping firms such as COSCO start taking large-scale VLCC deliveries, perhaps as early as 2008.

At present, an estimated 90 percent of China's oil shipping capacity serves foreign clients.[22] Reassigning these vessels to domestic firms would not help China's long-distance oil transport situation. According to *Lloyd's Sea Web*, only 18 of these ships are VLCCs suitable for economically transporting crude from the Middle East, Africa, and other distant suppliers. The bulk of China's current fleet consists of smaller vessels designed for short-haul oil trading. China will need more than 40 VLCCs to meet its goal of carrying 50 percent of imports on Chinese tankers by 2010.

Attempting to control maritime oil transport will likely cost more than outsourcing oil transport to private shippers. When the major Western oil companies ("Seven Sisters") dominated the global oil market in the 1960s, they ran large maritime divisions with tankers dedicated to hauling their production, which for most roughly equaled their refinery throughputs. Oil companies trimmed their tanker fleets after OPEC countries nationalized the majors' Middle East production. Hiring private tankers to carry oil imports may be more cost effective than acquiring and maintaining a large tanker fleet. Like other modern oil companies, China's national oil companies rely primarily on independent tanker operators to haul their oil.

If Beijing hopes to foster long-term strategic cooperation between domestic oil shippers and the national oil companies (some of which are among the world's leading VLCC charterers), it may have to offer tax breaks and other financial incentives. Otherwise, the shipping firms will likely utilize their ships based almost exclusively on "nationality-blind" commercial criteria.

[21] Interview, Beijing, June 2007.
[22] "China Urged to Beef Up Ocean Oil Shipping," *Asia Pulse*, March 15, 2006.

Shipping Sector Parallels with Oil Company-Central Government Relations

The relationships between China's national energy companies and central government may foreshadow how those between tanker operators and the central government will unfold. China's main oil producing and importing companies are China National Petroleum Corporation (CNPC), China National Offshore Oil Corporation (CNOOC), Sinopec, and Sinochem. Between 2000 and 2002, CNPC, Sinopec, and CNOOC all sold minority stakes to outside investors. CNPC and CNOOC made the publicly held portions of their firms into subsidiaries, PetroChina and CNOOC Limited. These share sales (typically around 20%) allowed the companies to raise operating cash and boost their international profile, while retaining clear state control.

Although Chinese energy companies are state-controlled, their corporate interests frequently influence high-level energy policy decisions.[23] It is widely believed, for instance, that much of the initial impetus behind China's "go abroad" oilfield acquisition push actually came from CNPC.[24] Over the past decade, Chinese national oil companies have adhered to a business model unlike that of Western firms. They are often criticized for subverting the market by offering "package deals" backed by state banks' soft loans and other sweeteners. Chinese state-owned companies are willing to 'overpay' for deals and often accept lower rates of return than private oil companies. These tendencies stem from a combination of relative inexperience in international energy deal-making, access to subsidized financing from Chinese state banks, low accountability to shareholders, and non-business incentives created by top executives' dual company and Party roles.

That said, Chinese oil companies appear to be placing increased emphasis on profitability. For example, PetroChina oil marketers have stated that transporting oil produced in distant fields back to China is too expensive.[25] In accordance with good business principles, they favor selling local production locally and acquiring crude for Chinese use closer to home. Had CNOOC successfully acquired American producer UNOCAL in summer 2005, it would probably have continued selling UNOCAL's Gulf of Mexico production on the U.S. market because it made greater economic sense to do so. Likewise, CNPC often sells a substantial portion of its Sudanese production on the world market rather than shipping it back to China.[26]

[23] Downs, "The Chinese Energy Security Debate," *China Quarterly*, March 2004, pp. 21-41.

[24] Downs, *Brookings*, pp. 38-39.

[25] Ren Xiaoyu, "Analysis and Opinions on How PetroChina Markets Its Equity Oil," *China Oil and Gas*, 2002, pp. 50-52.

[26] Downs, *Brookings*, p. 44.

The shipping industry's incentives for expansion appear similar to those of Chinese oil producers. The "national oil, nationally carried" oil transport concept parallels the "go abroad" oil acquisition policy. Both approaches involve commercial interests pursuing profits under the banner of enhancing national energy security.

Aggressively seeking deals overseas allows Chinese oil companies to expand production while casting themselves as "servants of the Chinese nation" by generating tax revenue and increasing the import share of Chinese-produced oil. State energy companies generate more than 20 percent of all tax revenue produced by SOEs.[27] Such contributions please the Communist Party, which can influence oil executives' future prospects. Many top executives have held, and in some cases continue to hold, high level political positions in conjunction with their business roles. For example, CNPC President Jiang Jiemin has served as governor of Qinghai Province, while Sinochem Vice President Zhang Zhiyin is a delegate to the 10th National People's Congress. In addition, there exists an informal "revolving door" by which good performance at the helm of an oil company can greatly advance an official's career. Wei Liucheng successfully managed CNOOC's initial public offering in 2001 and was rewarded with governorship of Hainan upon leaving CNOOC in 2003.[28]

Some shipping industry executives also have political careers. Dr. Qin Xiao, Chairman of China Merchants Group, is a member of the 10th Chinese People's Political Consultative Conference and served as a deputy to the 9th National People's Congress.[29] Successful shipping executives do not yet seem to enjoy as many plum positions as their oil industry counterparts. Nonetheless, China's shipping industry is acquiring the aggregate financial clout to justify an important political role. As it continues to grow, its location along China's populous, politically influential East coast, growing ranks of workers, and contribution to national and local coffers may give it added political influence. Thus, if China's shipping industry generates larger profits and tax revenue, political rewards for shipping managers will likely resemble those currently enjoyed by successful oil executives.

On the whole, China's state shipyards and shipping companies appear to be broadly following the model of the state oil and gas companies. In peacetime, state-controlled oil carriers will attempt to influence government policies in ways beneficial to their business, but, when the government wants something in return, will ultimately put profit before politics. In a crisis

[27] Steven Lewis, Baker Institute for Public Policy, Rice University, "Reform in Chinese Energy Policy: The NOCs at Home and Abroad," presentation at U.S. Naval War College, February 12, 2007.

[28] Joseph Kahn, "Profit or Politics? Chief of CNOOC Faces a Delicate Balancing Act," *New York Times*, July 7, 2005.

[29] China Merchants Group website at http://cmbk.com/en/management/default.htm.

scenario, by contrast, Chinese analysts write, state-owned vessels would stand ready to be pressed into service.[30] Having a state tanker fleet is not an oil security panacea, however. Potential flaws in China's emerging approach will be discussed shortly.

China's Shipbuilding Industry

Beijing has powerful economic incentives to bolster its shipbuilding sector. Shipbuilding boosts the entire industrial chain, including the steel industry, as well as the metallurgical and machine-tool sectors, among others. VLCCs recently built in Chinese yards have required approximately 884,000 man-hours to complete.[31] Chinese sources calculate that, in general, every 10,000 DWT built can create 100,000-200,000 man-hours of employment for Chinese workers. Thus, direct shipyard labor accounts for only about 15-20 percent of the entire amount of employment generated by building a ship. At present, China's shipbuilding industry directly employs more than 275,000 workers. Thus, on the basis of job creation alone, China's government has good reason to support its shipbuilders.

While China's VLCC fleet is smaller than those of more oil-reliant nations, this is changing rapidly as a combination of government policies, domestic commercial interests, and sizeable commercial advantages in building tankers drive increasing tanker construction in Chinese yards. Tankers form a major portion of Chinese yards' output and will continue to do so. It should be noted that the majority of Chinese yards' long haul tanker orders are actually being built for foreign buyers.

According to *Lloyd's Sea Web*, of the 21 million DWT of Suezmaxes and VLCCs currently on order or under construction in Chinese yards, roughly 13 million DWT are being built for foreign operators. Although China lags Japan and Korea in technology and yard management practices, the large number of foreign tanker orders seems to endorse the Chinese shipbuilding industry's increasing quality at unbeatable prices. Western ship owners interviewed by the authors indicate that Chinese yards' low prices, as well as a desire to establish relationships with rapidly growing Chinese shipbuilders, drive their current orders.[32] Chinese ship quality, which recently was suspect, is rapidly improving, even if it is not yet at the high level of South Korean- and Japanese-built vessels. Reflecting this increase in quality, foreign buyers are considering ordering chemical tankers and other more complex ships, in addition to the tankers and bulk carriers that have thus far dominated their orders.

[30] Yang, p. 123.

[31] Zheng Changxing, "2005 China Shipbuilding Industry Development Characteristics," *Mechanical & Electrical Equipment*, 2006, pp. 33-34.

[32] Interview with representatives of Western ship owners currently building tankers in Chinese yards, March 2007.

While two of China's large state-run shipyards (Shanghai Waigaoqiao and Dalian No. 2) are considered to be among the world's top 10, other yards still experience regular delays and quality control problems. China's entire ship subcomponents industry remains weak, creating a situation in which Chinese yards are excellent at hull fabrication but must import many key internal parts. Indeed, South Korean builders have even begun to construct hull blocks in China and barge them back to South Korea for final assembly. To boost the subcomponents industry, Chinese yards often force ship buyers to source engines and other subcomponents in China when they order vessels. Otherwise, ship buyers interviewed by the authors indicate, they would favor Korean and Japanese made engines and other internal parts. In sum, China's low labor costs and large land areas for yard expansion give it a distinct edge in building bulk carriers, tankers, and other less complex "commodity" ships.

Benefits for Oil Import Infrastructure

In 2005, only three ports—Qingdao, Zhoushan, and Shuidong—could directly berth tankers displacing 200,000 DWT or more, such as the VLCCs that deliver crude from Africa and the Middle East. Consequently, China is rapidly preparing specialized facilities at Ningbo, Quanzhou, and Maoming on China's southeast coast to handle 200,000-250,000 DWT oil tankers.

Connecting oil ports with users throughout the country has become a major priority. Chinese analysts recommend rapidly upgrading China's oil transport system (e.g., pipelines, harbors, ships, shipyards, and oil transport lines), along with governing laws and regulations. In particular, improving China's domestic oil pipeline network would enhance energy security. Robust capacity to shift oil supplies rapidly between major demand and import areas would introduce a degree of redundancy in case an incident closed one or more major VLCC-capable ports.

Can a Larger Tanker Fleet Ensure Oil Security?

Chinese analysts fear that the U.S. Navy, and even allied navies, might blockade energy shipments to China in a showdown over Taiwan or some other crisis. Chinese "hawks" such as Zhang Wenmu believe China's Navy must modernize because its ability to secure SLOCs and ensure the safety of China-bound shipments seriously lags behind China's growing import demand.[33] In their view, a national tanker fleet would bolster the security of the nation's oil supply only if PLAN units had the capability to escort Chinese tankers in a crisis.

[33] Zhang Wenmu, "China's Energy Security and Policy Choices," [Need source.] pp. 11–6.

China may also be concerned that an outside power could exert financial and diplomatic pressure on the home countries of major tanker operators (e.g., Greece or the Bahamas) in order to force them to cease carrying oil to China. The United States, in particular, has demonstrated a strong capacity to bring comprehensive financial, military, and diplomatic pressure to bear on foes. Having the capacity to haul a majority of Chinese oil imports on vessels owned by Chinese state and private shipping companies will ensure that an opponent could not use such a tactic to pressure China in a situation short of war.

Some Chinese analysts claim that using Chinese-flagged and operated tankers would help secure oil shipments from unstable areas such as Africa and the Middle East. To be sure, a national tanker fleet cannot protect oil importers from the internal security problems endemic to many oil-exporting countries. Civil war, terrorism, and many other factors could prevent supplies from ever reaching Chinese tankers. Yet while the internal instability of supplier countries may be unavoidable, an importer with its own tanker fleet and a blue water navy enjoys greater ability to ensure energy security once the oil leaves the exporting country. Protecting tankers and "downstream" infrastructure (refineries and distribution networks) is usually simpler than trying to protect oilfields in distant countries jealous of their sovereignty. Protecting an "upstream" oil or gas field thousands of miles away would entail a large, rapid joint military deployment that is beyond the capability of nearly all oil importers other than the United States. And, even if an importer boasted substantial force projection ability, its response would likely come too late to prevent a supply cutoff. It is unclear to what extent China's more hawkish and mercantilist analysts have considered these realities.

Tanker Protection Options

Tankers can be protected with escorts and by convoying. Shippers resist convoy operations because it hinders their flexibility and adds costs. Naval officers likewise tend to dislike escort missions, which cede the initiative almost entirely to the enemy. Convoying is also highly asset-intensive, particularly when facing aerial, surface, and subsurface threats. Assuming that two VLCCs per day would be needed to meet Chinese oil demand, the logistics of implementing such a convoy system would overwhelm today's PLAN. A weekly group of 14 VLCCs would require roundtrip steaming time of thirty-three days from the Persian Gulf to China, plus a two-day turnaround period to take on supplies and cargo. This thirty-five-day cycle, repeated weekly, would likely correspond to a need for more than 25 escorting surface warships and support vessels. Logistics ships would be necessary to refuel the escorts on both the inbound and outbound legs of the voyage (since the Chinese VLCCs would be vulnerable to attack when transiting the Indian Ocean after offloading in China). Additional ships would likely be required to perform maintenance and repair on the escorts.[34]

This rough calculation gives a basic idea of the tremendous assets required. Even if China's navy acquired sufficient surface combatants in the coming years to perform sustained convoy operations, China's leadership would still be forced to choose between escorting tankers and keeping sufficient forces in the main theater of conflict to win the fight that triggered the blockade. Recognizing this reality, a number of Chinese analysts write that it will be some time before China can realistically defend distant energy supply lanes.[35]

The second strategy for protecting shipping entails taking the fight to the enemy, attacking his bases, and driving him from the area. A Chinese doctrinal textbook notes that in order to avoid continually fighting at a time and place of the enemy's choosing, protective forces would have to work aggressively and "attack the enemy force immediately after locating it." The authors also emphasize that "covering forces should attack the enemy first in an effort to destroy the attacking enemy before it unfolds or uses weapons."[36] To accomplish these objectives, however, Chinese forces would need to achieve sea and air control at a specific time and place (i.e., where the ships being escorted are at any particular moment), a capability that China has yet to demonstrate far from its shores.

Implications of Further Chinese Naval Development

The pattern of Chinese naval acquisitions in recent years suggests that Beijing is not seeking to directly escort tankers, at least for now. China does, indeed, have a growing modern submarine force (including roughly 58 attack submarines), new land-attack cruise missiles (LACMs), long-range strike aircraft, and formidable ballistic-missile force with which it could attack the bases of any country that imposed a blockade or lent its support to the blockading power. China's navy also has approximately 72 major surface combatants, 50 medium and heavy amphibious lift vessels, and 41 coastal missile patrol craft. At present, China is simultaneously building two classes of attack submarine (*Yuan* and Type 093) and purchasing one (the *Kilo*) from Russia. These submarines could eventually launch LACMs, such as Russia's 300 km range *Klub* or China's *Dong Hai*-10, designed to strike targets 1500 km away. These

[34] This paragraph draws upon William Murray and Gabriel Collins, "China's Counterblockade Options," in *Maritime Implications of China's Energy Strategy* (Annapolis, MD: Naval Institute Press, Forthcoming 2008).

[35] Yang, p. 119.

[36] Wang Houqing and Zhang Zingye, eds., *The Science of Campaigns*, (Beijing: National Defense University Press, 2000), p. 304.

missiles might have a maritime strike mission. Finally, the PLA's 2nd Artillery commands a force of more than 900 short- and medium-range ballistic missiles.

Most of the naval platforms that China is currently developing seem to have been acquired with a clear focus on a Taiwan contingency, rather than escorting oil tankers over long ranges. Some of China's more modern ships and aircraft do have the necessary endurance and weapons to project combat power slightly further, into the South China Sea and into parts of the Western Pacific. The PLAN's limited number of oilers, tenders, and other replenishment vessels severely constrain China's long-distance operational capability, however. China's burgeoning shipbuilding industry has the capability to produce large numbers of these, but shipbuilders have so far focused on commercial vessels. Nevertheless, China's rapidly increasing defense budget (officially $45 billion in 2007 and estimated by the U.S. Defense Intelligence Agency to be as high as $85 billion to $125 billion) may allow for an ambitious building program.

In the 15-20 year timeframe, China could acquire the capability to execute long distance SLOC protection missions. Already, for instance, China's new J-10, SU 27, J-11, and SU-30 aircraft, and the weapons they can carry, represent a major improvement over their predecessors. Yet Chinese forces still must master aerial refueling in order to make these aircraft relevant in a distant SLOC defense campaign. In their studies of Operation El Dorado Canyon (the U.S. attack on Libya in 1986) and other U.S. aerial campaigns, Chinese analysts note that aerial refueling can give tactical aircraft (such as the SU-30 or J-10) strategic strike range.[37]

China is also developing significant cruise missile capabilities that would be useful in a SLOC protection campaign. China's formidable SS-N-22 Sunburn supersonic missile can be fired from its four Russian-made *Sovremennyy* class cruisers. Every surface warship launched by China in the past decade (with the possible exception of the new LPD) carries sophisticated, long-range YJ-series anti-ship cruise missiles (ASCMs), which compare well with foreign systems. It is important to recall that a single Chinese-made C-802, which is likely less capable than China's newer ASCMs, nearly sank an Israeli *Haanit*-class frigate during the summer 2006 war between Israel and Hezbollah.[38] China is also thought to be in the process of developing anti-ship homing warheads for its ballistic missiles, which would be extraordinarily difficult to defend against.[39]

Surface vessels operating far from their home ports would also require strong organic air defense capabilities. Rapid improvements in air defense

[37] Ling Chao, "The IL-78 Comes to China," *Ordnance Industry Science & Technology,* 2005, pp. 19–23.

[38] See Matt Hilburn, Hezbollah's Missile Surprise," *Seapower*, September 2006, pp. 10–2.

[39] Rear Admiral Eric A. McVadon, U.S. Navy (Retired), China's Maturing Navy," *Naval War College Review*," Spring 2006.

and surface warfare are already evident in the PLAN's most recent classes of surface combatants, which mount sophisticated air search and missile guidance radars, and long-ranged vertically launched surface to air missiles (SAMs). These measures will enhance China's power projection options. "The long-range SAM systems [that the *Luzhou* and *Luyang* II destroyers] possess will provide Chinese surface combatants with an area air defense capability as they operate farther from shore and outside of the protection of land-based air defense assets," states Scott Bray, deputy senior intelligence officer for China in the U.S. Navy's Office of Naval Intelligence. "Under the protection afforded by these advanced area air defense destroyers, which are also equipped with long-range ASCMs, the Chinese Navy can operate combatants such as two recently acquired *Sovremennyy* II [destroyers]. These long-range engagement and air defense capabilities now being fielded by the PLA(N) give China a significantly improved capacity for operations beyond the littoral in support of SLOC protection."[40]

Improved destroyers and air defenses will not alone afford China SLOC defense capabilities, however. China's navy presently lacks a robust anti-submarine warfare (ASW) capability. As such, PLAN ships engaged in distant SLOC protection would be highly vulnerable to an adversary's attack submarines and mines.[41] Although the PLAN's newer large surface combatants can carry ASW helicopters, most appear to lack modern hull-mounted or towed sonars. There is also little evidence that China is in the process of acquiring truly long-range maritime patrol aircraft, which are essential for ASW missions.

China's growing retaliatory capacity would help to insulate it from coercive pressure short of war. In the event of hostilities, China might be able to deny outside forces access to its maritime periphery, or launch retaliatory attacks against enemy forces in portions of SLOCs nearest to China. But while China has made substantial qualitative improvements in its navy over the past decade, thereby avoiding block obsolescence of several platforms, it does not yet possess the overall force structure to support multiple missions to defend contested SLOCs. "At present," the U.S. Department of Defense judges, "China can neither protect its foreign energy supplies nor the routes on which they travel, including the Straits of Malacca . . . ."[42]

Should China develop significant SLOC defense capabilities in coming years, several indicators will be apparent to foreign analysts. First, China would have to purchase or produce a substantial contingent of oilers, tenders, and other replenishment vessels. Second, China would have to

[40] Scott Bray, Seapower Questions on the Chinese Submarine Force," U.S. Navy, Office of Naval Intelligence, 20 December 2006, http://www.fas.org/nuke/guide/china/ONI2006.pdf.

[41] Andrew Erickson, Lyle Goldstein and William Murray, China's 'Undersea Sentries' Sea Mines Constitute Lead Element of PLA Navy's ASW," *Undersea Warfare*, Winter 2007, pp. 10–5.

[42] Office of the Secretary of Defense, *Military Power of the People's Republic of China 2007*, Annual Report to Congress, p. 8.

acquire reliable overseas bases (e.g., in the Indian Ocean). This would represent a significant departure from Chinese foreign policy post-1949, a central tenet of which has been commitment to forego the permanent basing of military forces in other nations. Third, in order to achieve viable, lethal ASW capabilities, a substantial force of PLAN nuclear attack submarines would need to go on frequent extended deployments. Such a force has proved enormously difficult and expensive for the USSR, and even the United States., to acquire. Finally, in order to achieve high levels of presence and readiness, China's navy would have to deploy a substantial portion of its forces at all times. This would require the maturation of advanced levels of doctrine, training, and human capacity, none of which are currently obviously present in China's navy, but all of which are well within the capability of China to develop.[43]

Calling an Opponent's Bluff

Unless China's navy can attain outright naval and air superiority in a given sea zone, carrying oil in Chinese-flagged tankers during wartime might render Beijing *more* vulnerable to interdiction of its energy supply because—at least in theory—foreign navies could easily determine which tankers were bound for China. It might seem, then, that absent a substantial blue-water naval capability—which may be decades away—China is making itself a target by constructing a state-controlled, Chinese-flagged tanker fleet.

If so, Beijing's best option might be to rely on private third-party tanker operators, whose deliveries could be effectively stopped only by a close blockade of Chinese ports—in turn exposing the blockading state's naval forces to a wide range of military threats and almost certainly sparking a larger conflict whose repercussions could exceed any likely political gains for that state. Alternatively, reflagging Chinese-owned tankers to Liberia, Panama, or another flag-of-convenience state would force an interdicting navy to go to much greater lengths to identify a tanker's ownership and ultimate destination.

Nonetheless, because of international legal norms, having a Chinese-flagged tanker fleet import oil for the government might indeed help to ensure China's energy security during crises short of war. Under international law, a PRC-flagged tanker in government service would enjoy the substantial protection of China's flag. If an outside power interdicted such a vessel, China would have grounds to claim that its sovereignty had been breached sufficiently to threaten its national well-being, thereby justifying a serious armed response. The escalatory barrier created by putting state-flagged vessels into government service would thus deter adversaries from interdicting PRC oil shipments

[43] The authors thank William Murray for his assistance with this paragraph.

unless hostilities were either imminent or already underway. It is difficult to imagine a scenario short of major war in which an adversary would risk triggering escalatory behavior by Beijing.

During a crisis, moreover, oil carried on Chinese-flagged tankers not already being shipped on behalf of PRC state-owned oil companies could rapidly be resold at sea to any number of PRC government entities, thus creating the necessary legal conditions to assert sovereign immune status for the tanker.[44] Based on *Lloyd's Sea Web* data, thirty one of the 42 VLCCs currently on order in Chinese yards for Chinese shipping companies are slated to fly the PRC flag (of the other 11, 5 will be Panamanian-flagged and 6 will fly Hong Kong S.A.R.'s flag). These VLCCs would be the primary vessels hauling oil through the Indian Ocean and other potentially vulnerable SLOCs.

Interdicting private tankers at sea would be difficult in practice, moreover, because at any given time the ship's bill of lading might not accurately reflect the true end destination of an oil cargo. In normal commerce, cargoes may be bought and sold dozens of times while still on the high seas. Bills of lading can also easily be falsified, a technique regularly used by smugglers. Finally, unless the blockading power were willing to risk environmental disaster by disabling or sinking uncooperative tankers, it would likely lack sufficient military assets to board and take control of such ships, as fifty-two oil tankers/day pass through the Malacca Strait alone.[45]

Seeking lower insurance rates is another possible rationale for a state tanker fleet. Under normal operating conditions, hull insurance for a tanker is between 2.5 and 3.75 percent of ship value on an annualized basis. Thus, the operator of a $130 million VLCC can expect to pay $8,900-13,300/day in insurance costs. However, if insurance firms declare an area a War Risk Exclusion Zone (e.g., in the Persian Gulf), rates can climb to 7.5 to 10% of ship value on a *daily* basis, meaning that the same VLCC operator would now have to pay between $8.9 and $13.3 million/day to insure his ship while it was in the danger zone. Assuming three days in the Gulf each time the vessel loaded oil, the operator would have to pay from $26.7 to $39.9 million per trip. Even in the best of markets, VLCCs rarely command more than $100,000/day. Yet to pay off the projected war risk insurance costs, a VLCC making the 33-day trip from the Gulf to East Asia would have to earn more than $1 million/day.

[44] See High Seas Convention (1958), Article 8; United Nations Convention on the La of the Sea (1982), Articles 32, 58(2), 95 and 236; A. Ralph Thomas and James C. Duncan, "Annotated Supplement to the *Commander's Handbook on the Law of Naval Operations," U.S. Naval War College International Law Studies* (1999), pp. 110, 221, 259, 390; Chairman of the Joint Chief of Staff Instruction 3121.01B (January 2005); Joel Doolin, "The Proliferation Security Initiative: Cornerstone of a New International Norm," *Naval War College Review*, Spring 2006.

[45] Yue Laiqun, Unavoided Malacca Strait," *China Petroleum Enterprise*, September 2005, p. 6.

Commercial ship owners would only operate under such conditions if an outside power either paid them such rates, or offered insurance and a guaranteed profit payment as part of an oil transport deal. State-owned ships could conceivably self-insure and forego paying insurance premiums in order to maintain continued oil delivery service to the home country. For all these reasons, a domestically flagged tanker fleet makes some strategic sense, at least from Beijing's security-focused perspective.

Security Implications

Not all contingencies threatening Chinese energy security involve an armed conflict. A terrorist attack on a Saudi export terminal that suddenly tightened world oil markets, for example, might be sufficient to trigger a government "call" on state-run tankers. It might prove difficult for Beijing to press PRC-flagged tankers into state service during a crisis, however. Assuming that PRC tanker operators followed normal peacetime operating principles, their VLCCs could be chartered out to shippers in places as far afield as Nigeria, Venezuela, or northwest Europe. Given the distances involved, it might take thirty days or more for these vessels to reach Chinese ports, even if they immediately broke contracts and headed for China.

If it had advance warning, China's central government might notify tanker operators ahead of time, pay contract termination penalties, and preposition state-owned tankers for crisis oil deliveries. However, numerous commercial observers carefully track tanker movements, meaning that even covert Chinese preparations would be noticed quickly. Other major powers would rapidly realize that China was marshalling assets, and might interpret such actions as a sign that Beijing anticipated hostilities. Rather than helping to ensure national security, therefore, a decision to call on PRC-flagged tankers during times of major tension could well cause other actors to assume the worst—thereby precipitating a more serious crisis.

The security of China's maritime oil transport lies in the inherent difficulties facing any force trying to disrupt it. It would be very difficult to interdict private tankers bound for Chinese ports. The global oil market is highly fungible; ship destinations are unclear, since cargoes are often resold at sea; and oil can be transshipped to China through third ports in the region. In addition, the number of tankers transiting key chokepoints would likely far exceed any potential blockading navy's physical ability to take control of uncooperative ships, unless it were willing to accept the diplomatic, environmental, and military consequences of using disabling fire. These factors, in addition to the legal considerations mentioned above, explain both Chinese preoccupation with acquiring state-flagged tankers and why during peacetime Beijing can allow Chinese shipping companies to operate them under normal commercial principles.

Conclusion

Anxiety over the security of maritime oil supply is one factor shaping decision-making as interested actors promote the development of a large Chinese tanker fleet and Beijing contemplates the construction of a blue water navy. For the foreseeable future, particularly during peacetime, Chinese tanker operators will work almost exclusively within the framework of the existing global tanker market. Circumventing this system by forcing Chinese shippers to serve Chinese oil producers at any cost would be economically unsound. Energy subsidies are a parallel case in point. China already pays its state oil companies billions of dollars in subsidies annually to compensate them for losses they incur by purchasing oil at market prices and selling products made from that oil at government-capped rates within China.

Tanker operations driven by economic opportunity are more profitable than those driven by state directives. Moreover, commercial deals with foreign tanker operators will tend to further integrate Chinese shipping and shipbuilding firms into the global oil shipping sector. The precedent set by China's national energy companies in emphasizing profit over politics whenever possible (e.g., in equity oil sales to the international market rather than China) also favors the adoption of a largely commercial approach to tanker fleet operation. Although China has spent billions of dollars on overseas equity oil acquisitions, the flagship state firm CNPC sells a sizeable portion of its equity oil on the international market.[46]

Given the Chinese leadership's current bias toward state-led oil security policies, Beijing likely hopes that Chinese shippers will come to haul a large percentage of China's oil imports. However, the final outcome will likely depend much more heavily on shipping economics than it does on politics. China's central government faces an uphill fight in coordinating energy policy in general, let alone oil transportation policy. Indeed, in recent discussions, a well-placed Chinese energy policy expert indicated that the process of establishing an Energy Ministry has been rocky and that the plan could fail.[47]

In sum, Chinese state and private companies seek to profit from shipbuilding and tanker operation during peacetime while the government likely believes that it is hedging its bets against future threats to oil shipments by supporting a large tanker buildup. Security concerns are probably shaping Beijing's desire and efforts to have Chinese tankers haul Chinese crude imports. Over the longer term, as China develops greater international interests, increasing comprehensive national power and confidence vis-à-vis Taiwan's status may finally allow China's navy to cast its strategic sights on

[46] Gary Dirks, "Energy Security: China and the World," speech at "International Symposium on Energy Security: China and the World," Beijing, China, May 24, 2006.

[47] Interview with author, April 2007.

blue waters and develop power projection capabilities sufficient to protect Chinese tankers progressively further afield.

As the next Five Year Plan takes shape, China's leaders will make crucial decisions concerning the extent to which China's navy should expand its power projection ability, a factor closely related to China's energy strategy. These decisions, in turn, will shape strategic perceptions, doctrine, and force structures for the next 10-20 years. Identifying and analyzing the strategic rationale behind China's apparent intent to create a state-led tanker fleet expansion can help inform U.S. strategy and policies concerning China, particularly as the U.S. Navy formulates its own new maritime strategy.

Washington should use this window of opportunity to make the case to Beijing that, for the time being, the world oil market is a far better guarantor of energy security than a state tanker fleet protected by a blue-water navy. While these are clearly sensitive topics in which both sides have great strategic stakes, judicious use of U.S.-China navy-to-navy exchanges and bilateral consultations may help the world's two largest energy consumers achieve sustainable, if competitive, coexistence.

EXHIBIT 75

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Asia Rising: Ships of State?

Christopher R. O'Dea

SHIPS OF STATE?

Christopher R. O'Dea

Our Ship of State, which recent storms have threatened to destroy, has come safely to harbor at last.

CREON, IN SOPHOCLES'S *ANTIGONE*

Backed by substantial financing and political support, China COSCO Shipping Corporation Limited (COSCO) emerged from the container shipping industry's recent turmoil with one of the largest fleets of commercial vessels in the world and control of a rapidly expanding network of ports and terminals. This article argues that this expansion is a new and distinctly Chinese approach to maritime development and asks whether the state-owned shipping company has become the flagship of China's ambition to become a global maritime power.

Chinese maritime and logistics firms, supported by state-subsidized capital deployed overseas, quickly are becoming a leading edge of China's global influence. In recent years, Chinese state-owned companies have built a global network of shipping and port assets that suggests the country is using maritime commercial investments to advance its geostrategic priorities by establishing economic influence over countries in which Chinese-controlled port facilities are located.

These Chinese state-owned enterprises (SOEs) are creating one of the most extensive maritime networks in the world by acquiring strategically located port assets in the European Union (EU), Latin America, the Middle East, and the Indian Ocean. They provide the capital to build or upgrade commercial terminals; then they direct container traffic to those ports through shipping lines

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that are controlled directly by the port's parent company or indirectly through companies associated with China's strategic port owners through formal shipping alliances.

This commercial drive complements a well-documented naval expansion by the People's Liberation Army Navy (PLAN) since at least the 1980s.[1] The framework for Chinese naval policy in what China calls the "far seas"—the waters beyond the "first island chain"—has been examined comprehensively.[2] Models of China's potential basing requirements to support overseas naval operations also have been assessed, as have the use and organization of Chinese maritime law-enforcement resources.[3]

This article argues that the port and shipping transactions of the People's Republic of China are a major vector of a government policy to achieve global maritime power and commensurate political influence without resorting to, or at least while mitigating the risk of, a direct confrontation with the United States or other nations with global maritime interests. The commercial-strategic linkages and state support for Chinese port and shipping ventures resemble a twenty-first-century version of the Vereenigde Oost-Indische Compagnie (VOC) (Dutch East India Company). Chinese SOEs are today, as the VOC was in its time, notionally commercial enterprises that operate globally with the full financial and military backing of their home state. In this view, the vessels that connect these ports into an integrated network of commercial power are "ships of state," functioning as instruments of Chinese national strategy while they sail as commercial carriers of manufactured goods and commodities.

China's unique and assertive approach to maritime development has been described as the construction of military-relevant facilities rather than overtly military bases. As implemented in the "near seas," the rapid construction of airfields and harbors on reefs in the South China Sea has enabled China to assert effective control over contested areas, in accordance with its idiosyncratic maritime-rights doctrine. As Chinese strategists turn their attention to the far seas, Chinese state-owned companies are developing ports around the world that can accommodate the very large containerships designed to create economies of scale in seaborne transportation. These facilities offer China a larger, more reliable logistics network with potential military applications related to the protection of overseas Chinese citizens and economic interests.[4]

The first part of this article examines the recent rapid increase in Chinese port and shipping investments, focusing on transactions that COSCO has undertaken, in particular its acquisition of a controlling stake in a privatized port entity in Piraeus, Greece. Achieved through a series of investments and privatization transactions carried out over nearly a decade, this has resulted in a Chinese state-owned company—one that is viewed as the primary logistical supporter of the Chinese navy—having the ability to exercise maritime-development powers granted by the national government of an EU member state. This section also includes a review of how China exercises state control or influence through the agency of state-owned companies carrying out transactions and forming commercial alliances, as well as an assessment of the strategic implications of China's approach to building a maritime commercial network that appears to be aligned with Chinese national security aims.

The second section of the article discusses key trends in the global shipping and logistics business and how stresses in those sectors have given rise to conditions conducive to China's acquisition campaign. The primary focus is on the consolidation of global container shipping lines into the COSCO-dominated Ocean Alliance and two competing container shipping alliances; this encompasses an examination of how Chinese regulators used the country's antitrust law to block a proposed alliance of Western shipping lines that could have challenged China's efforts to acquire and consolidate maritime power. This section continues with a look at how Chinese state financial entities fund the development of China's maritime network through strategic investments in non-Chinese companies and how Chinese state regulatory support of key transactions helps expand the network and formalize links between Chinese state companies engaged in the expansion campaign. A detailed analysis of the port, terminal, and shipping activities of CMA CGM, a French shipping and terminal company based in Marseille, illustrates how Chinese state regulatory action and state financial support played a role in CMA CGM becoming a member of the Ocean Alliance.

The global logistics industry is moving toward an integrated system in which land-based terminals hold increased importance as exchange points between ships and rail and road networks. In the emerging commercial shipping regime, marked by excess capacity in container shipping and increasing competition among ports for business from ever-larger containerships, it is essential for survival that companies control both shipping lines and well-equipped land terminals at suitably located port sites. This shift toward an integrated system favors concentration of maritime commerce at certain large hub ports; automation at every stage of the global supply chain; and, most importantly, control of the port territory and port authorities that decide how to develop ports. Ports themselves are potentially valuable, but the sector has become increasingly competitive since the financial crisis, largely owing to the high cost of modernizing facilities or building new terminals, and both institutional investors that own port assets and port operators have sold numerous assets to Chinese entities, with a notable acceleration of Chinese purchases around the world during 2017.

The third section raises several considerations arising from China's progress so far and offers a perspective on the emerging risks to the open maritime domain posed by China's state-backed investments in ports and shipping assets. While there are clear signs of unease about Chinese expansion—magnified by recent overt military action near one port—most resistance so far has been expressed through civil administrative channels; examples include allegations of tax law violations and the raising of diplomatic concerns about the transparency of Chinese purchases. The limited nature of these protests—focused as they are on narrow, if important, topics—has left China able to pursue its maritime expansion without sustained opposition on a global basis.

CHINESE PORT AND SHIPPING INVESTMENTS

COSCO Spearheads Chinese Port-Investment Activity

While several Chinese SOEs are involved with overseas port and shipping development, COSCO has developed the most extensive involvement across the industrial sectors that make up the modern supply chain, and thus it commands all the building blocks of commercial maritime power. COSCO's economic and technological capabilities are commercial, but as an SOE it acts under the supervision and, to some degree, the direction of the Communist Party of China (CPC). COSCO has been at the forefront of state-led efforts to expand the geographic range of China's outbound investments in overseas ports and related infrastructure, first under the Go Out policy, beginning early in the twenty-first century, then continuing as China adopted economic policies that have become more strategic and assertive in terms of implementation and more expansive in terms of geographic scope. The One Belt One Road (OBOR) initiative was announced in a series of speeches in September and October 2013 in which Chinese president Xi Jinping described the initiative's Silk Road Economic Belt across Central Asia and the Maritime Silk Road across the Indian Ocean. The Belt and Road Initiative (BRI) superseded OBOR during 2016 as China steered away from using the word "one" to describe an international economic policy that it claimed was intended to generate benefits not only for China but also for the countries that received funding from Chinese state entities or the lending institutions and investment funds that were established to finance BRI projects.[5] There is no agreed-upon definition of what qualifies as a BRI project.[6] While this article will use the BRI moniker to refer to China's approach to international economic, regulatory, and financial matters, its primary focus is to describe the pattern of Chinese investment in commercial seaports and related logistics, transportation, and electric-power assets, and to assess the practical diplomatic and security implications of China's development of a global port network.

While COSCO has received increasing Western media coverage since it gained formal control of the Greek port of Piraeus in 2016, one of the predecessor companies that was merged to form COSCO began to operate a terminal in Piraeus in

2009, far predating China's adoption of the BRI. The company enjoys significant direct financial support from Chinese state financial institutions, including the China Development Bank.

COSCO's current competitive strength in the global shipping and port business stems in part from Chinese antitrust regulators' actions that prevented competing shipping lines from forming an alliance during the depths of the container shipping crisis of the past several years, a prohibition that underscored the unique nature of merger review in China and the importance of national industrial policy in decisions pertaining to the competitive position of Chinese SOEs.[7] That intervention into the structure of the global container-shipping industry—ostensibly justified by the desire to maintain competition on the ocean trade routes between Southeast Asia and Europe—contributed significantly to creating the conditions in which COSCO has been able to emerge as the leading company in a commercial shipping alliance that now controls the majority of those routes.

Excess capacity and long-term declining revenue in the container-shipping and terminal industries have created market conditions in which Chinese firms or Chinese-backed entities, supported by centrally allocated credit from China's state financial institutions, can acquire assets from owners unwilling or unable to make the substantial capital investments required to modernize port facilities. During the last ten years, capacity growth in container shipping has outstripped demand growth except for 2010–11 and 2016, when low net-capacity growth resulted from the scrapping of older ships and delayed deliveries; in addition, the proportion of the global container fleet that was idle was high, at 7 percent at the end of 2016. The resulting shift toward larger vessels to gain economies of scale has created financial pressure on ports to upgrade facilities to accommodate megaships so as to remain viable as stops on primary shipping routes. While container transport volume is forecast to grow in line with global gross domestic product (GDP) growth rates in the short to medium term, container volume grew at twice the rate of GDP from 2007 to 2016, so excess capacity is likely to remain a negative factor for port and shipping revenue.[8] This has presented Chinese SOEs with an opportunity to create one of the most extensive maritime networks in the world, by acquiring strategically located port assets, providing the capital to build or upgrade commercial terminals, and then directing container traffic to those ports through shipping lines that are controlled directly by the port's parent company or indirectly through companies associated with Chinese port owners through formal shipping alliances.

During the past three years, Chinese firms and Chinese-financed entities have increased dramatically the amount of capital deployed to acquire or invest in port assets. One investment bank that tracks Chinese state investments found that during the year that ended in June 2017 Chinese companies announced plans to expend $20.1 billion buying or investing in nine overseas ports, representing a steep increase from the estimated $9.97 billion that Chinese entities invested in foreign port projects during the year that ended in June 2016. These assets have included port-operating concessions, actual seaports, and container and other cargo terminals. The importance of the maritime route from China across the Indian Ocean and on to the Mediterranean shows clearly in the newly announced investments.[9] Among several Chinese SOEs involved in this activity, the primary actor is COSCO, which has undertaken some of the most strategically important acquisitions of port authorities, shipping lines, and related assets along the Asia–EU route, including transactions that have transformed the port of Piraeus in Greece from a struggling cruise port into a major containerport now serving as the western terminus of China's Maritime Silk Road.

The purpose of each of these transactions is couched in the optimistic nomenclature of win-win economic development and bilateral friendship typically employed to describe projects under the BRI. However, the speed and scope of the acquisition campaign, combined with the centralization of control in a handful of SOEs and allied non-Chinese companies, raise fundamental questions about the nature and purpose of the network China is building.

It is important to note at the outset that the commercial maritime campaign that COSCO and other Chinese SOEs are undertaking is distinguishable from the BRI. While announcements of Chinese overseas investments now routinely recite how any given project will advance the aims of the BRI, the funding of SOEs involved in the establishment of the global port and shipping network increasingly is coming from China's main long-term development banks rather than the institutions that have been set up to evaluate and finance infrastructure projects under the BRI. While pricing information about most transactions is opaque, in some cases shipping consultants have questioned the high valuations at which COSCO has acquired certain assets, suggesting that obtaining those assets is a matter of achieving strategic national security goals rather than a financial investment that will be required to deliver market-based returns. The sustained nature of the port-buying campaign, coupled with extensive cooperation agreements between COSCO and other Chinese SOEs in port and rail construction, auto manufacturing, and port operation, suggests that the initial objective of building a global port network under Chinese control is to secure commercial sites that will afford China a reliable system for transporting Chinese imports and exports. However, the simultaneous investment in power-generation and -transmission assets, inland transportation routes, and telecommunications infrastructure in port host countries—the financing of which creates economic influence for China—suggests that the expanding Chinese commercial maritime network is the foundation for future deployment of the country's naval forces.

Since the National Development and Reform Commission formalized the BRI in an action plan in March 2015, the policy has evolved. It has been stretched to accommodate new geographic regions beyond the original Indo-Pacific and Central Asian areas, as well as projects that were initiated under other development programs.[10] Most importantly, the Nineteenth National Congress of the CPC in October 2017 amended the party's constitution to make the BRI a national objective, a move that constitutes a "Chinese state strategy" in the making, in which top-down directives of the CPC would exert more pressure on Chinese banks, state-owned companies, private companies, and business operators to make investments abroad in a manner that reflects Beijing's strategic objectives.[11] Official Chinese policy documents and analyses of China's maritime infrastructure investments in the Indo-Pacific region from state- and CPC-affiliated publications indicate that Chinese analysts routinely prioritize China's national security interests over the objective of mutually beneficial economic development—contradicting ostensible Chinese policy. Chinese analysts argue that the BRI's Maritime Silk Road component can help ensure Beijing's access to vital sea lines of communication (SLOCs), and they view port investments as vehicles by which China can cultivate political influence to constrain recipient countries and build dual-use infrastructure to facilitate Beijing's long-range naval operations. Similarly, the behavior of Chinese companies involved in port projects indicates that these investments are not driven principally by the concept of win-win development—as Beijing claims—but rather that the investments appear to be calibrated to generate political influence, stealthily expand China's capability to project and sustain military presence, and create advantageous strategic environments for China in the various regions where port and logistics investments are undertaken.[12]

This article does not attempt to evaluate whether any given project meets the elastic criteria of the BRI, but instead will look at the actual pattern of transactions globally that Chinese SOEs have undertaken to acquire assets in the port, shipping, terminal, and related businesses and the current available evidence of how those assets are being managed, then pose the following practical strategic question: What kind of network do these assets constitute?

Strategic Considerations with Respect to Chinese Shipping and Port Investments

Available evidence suggests that the network China is building could form the basis for a pattern of commercial maritime influence—and potentially a global trading system—very different from the one that has prevailed since the end of World War II, and from which China benefited as it industrialized over that time. These transactions, collectively, reflect a distinct Chinese model of acquiring power through maritime commercial investment centered on ports—a model that seeks to mitigate China's historic strategic transportation vulnerabilities, project Chinese influence into economic and maritime realms now almost exclusively under U.S. control, and influence host countries to support Chinese interests. Already, one port host country has blocked EU criticism of China's human rights record at a United Nations body, suggesting that China can influence the position of a nation in which COSCO, China's primary state-owned shipping company, has made major investments.[13] COSCO also has taken steps to move to China some board meetings and decision-making for recently acquired assets domiciled in the EU.

These developments illustrate the strategic nature of China's campaign of investment in ports and shipping. As detailed below, this has included gaining meaningful quasi-governmental power over port development in other nations. This campaign seems designed not only to help Chinese state-owned companies survive the ongoing stress in the global shipping and construction industries by managing excess shipping capacity but also to disadvantage competitors. In critical cases, China has increased pressure on companies that compete with its state-owned shipping and port entities by using Chinese regulatory power to prevent competitors from taking actions to rationalize their cargo-carrying capacity. Chinese government lenders also have provided capital to certain competitors to finance major purchases from Chinese shipyards. In effect, China is extending commercial influence from its factory regions, where products are made, outward through the global supply chain that delivers those products. In terms of building influence in a world highly dependent on global trade, having control or significant influence over the facilities required for the distribution of goods produced in China affords Chinese companies more leverage than they would obtain if they controlled only ocean transport and shipping costs.

The use of alliances as a method of achieving influence in the shipping industry is notable. Since being formed from two predecessor state-owned shipping companies, COSCO has become the dominant line in one of the three container-shipping alliances that have formed to cope with the decline in container volume since the financial crisis of 2008. Alliances are a hallmark of a maritime approach to grand strategy, typically being one part of a multilateral approach in which trade is conducted among voluntary members under a uniform set of rules that apply to relations among all members.[14] While most of China's agreements to acquire or develop ports are concluded on a bilateral basis rather than under general rule sets, China has adopted an alliance approach in the port sector—for example, with the organization in 2016 of the China-Malaysia Port Alliance, an effort to consolidate Malaysian logistics capabilities into a regional hub. The alliance, which encompasses twenty-one ports, includes Malacca, where China is investing ten billion dollars to build a deep-sea port that is expected to surpass Singapore and become the largest in the region when it is completed in 2025.[15]

For China, the SOE-led port-expansion campaign provides strategic capabilities that help mitigate the dependence of the country's economy on global shipping that transports manufactured export goods and raw-material and energy imports through a few narrow maritime passages such as the Strait of Malacca, the Strait of Hormuz, the Bab el Mandeb, and the Suez Canal. Given that most sea-lanes ultimately remain largely under U.S. control, the sea has become an important realm of global competition between the United States and China, yet China lacks the capacity to ensure the security of its essential interests, such as oil-shipping routes across the Indian Ocean. This means that China's overseas supply chain long has been exposed to security threats, in particular strategic threats from Western countries, a situation that poses a threat to the Chinese national economy and constitutes a strategic weakness that cannot be ignored.[16] China's navy is expected to defend major SLOCs against disruption at critical choke points, but SLOC protection requires the ability to sustain maritime presence in strategic locations in hostile conditions for extended periods. China's concern about SLOC protection has expanded in step with the expansion of the country's economic connections, generating increased discussion of the potential for overseas naval bases.[17] The need for a port network under Chinese control to mitigate these risks has been recognized. It recently was linked to the concept of a Maritime Silk Road by Liu Cigui, former director of the State Oceanic Administration. Liu has written that port facilities are the foundation of sea-lane security, requiring China to establish sea posts to support and resupply ships traveling and securing ocean routes, by either building or leasing facilities.[18]

An Emerging Chinese Model of Twenty-First-Century Port Development and Control

The pattern of investments constitutes a new and distinctly Chinese approach to maritime development. The emerging Chinese model encompasses developing dock and terminal facilities, securing control of port-investment and -development decisions, integrating terminals with shipping assets under direct or allied Chinese control, enhancing or constructing land-based transportation routes, and achieving economic and political influence within host countries. The decision to pursue this model never was declared or announced; instead, awareness of it emerged after a series of transactions occurred. While each transaction attracted routine coverage by shipping and financial media, the progression of COSCO's involvement with Piraeus Port—from terminal operator to controlling shareholder of the publicly traded port-operating company—only recently has engendered detailed academic and policy analysis. A recent analysis of COSCO's situation in Piraeus concludes that it constitutes a new "Greek prototype" of port governance that "implies the losing of any public sector power to intervene in what is the institution responsible for the oversight of strategy and the development of modern ports"—that is, a port authority.[19]

COSCO itself was formed by the $8.7 billion merger of two state-owned Chinese shipping conglomerates, China Ocean Shipping (Group) Company (COSCO), and China Shipping (Group) Company. Chinese regulators approved the merger in December 2015 and it became effective in February 2016. The deal spanned almost every aspect of the shipping and maritime industries, including containerships, dry-bulk ships, tankers, liquefied natural gas (LNG) ships, and other specialized vessels; shipyards and ports; and leasing, finance, insurance, and other shipping services. Requiring seventy-four transactions to combine subsidiaries of the two companies, the merger was one of the most complex in the recent history of China's capital markets.[20] Postmerger, the overall group is known as China COSCO Shipping Corporation Ltd. It is headed by Xu Lirong, chairman of the board and party secretary of China COSCO Shipping, who previously was chairman of the board and party secretary of China Shipping (Group) Company. Wan Min, previously managing director of COSCO Container Lines Ltd. and president of COSCO Americas Inc., led the merger transaction and then served as a director of the board, president, and deputy party secretary of the combined company, referred to herein as COSCO.[21]

In summary, the principal direct transactions of COSCO or its predecessor companies since 2008 include the following:

- Establishment of the Piraeus container terminal at Piraeus Port in 2009
- Acquisition of a controlling stake in Piraeus Port Authority SA in 2016
- Acquisition of a 40 percent stake in a joint venture with AMT Terminals to build and manage a new terminal at Vado Port in Vado, Italy, in 2016
- Acquisition of a 35 percent stake in the Port of Rotterdam's Euromax terminal, an automated container terminal that began operating in 2010, for $143 million
- Acquisition of a 15 percent stake in Shanghai International Port Group (SIPG), which is controlled by its majority owner, the State-Owned Assets Supervision and Administration Commission of the State Council (SASAC), in 2017
- Acquisition of a 51 percent stake in Noatum Port Holdings SLU (NPH) in Valencia, Spain, from a fund managed by JP Morgan Asset Management in 2017

- Acquisition of the entire equity capital stock of Orient Overseas International Ltd. (OOIL) of Hong Kong, in a joint purchase undertaken with SIPG in 2017
- Acquisition in September 2017, for $42 million, of the 76 percent it did not own already of the APM Terminals Zeebrugge container terminal, with a capacity of one million twenty-foot-equivalent units (TEUs), in Belgium's second-busiest port; it previously was owned by a unit of Maersk Group, a COSCO competitor

While these are not the only transactions COSCO has undertaken recently, they are the investments that, taken together, embody COSCO's expansion strategy in the Mediterranean region, which is the most advanced in terms of the scope of assets acquired and the control of decision-making achieved. Chinese SOEs or allied entities have made similar investments elsewhere, including the following: in Brazil, a hydroelectric plant, and elsewhere in Latin America, a key terminal and a shipping line; in Singapore, a major shipping line and container terminal operator; in Sri Lanka, a major port; and in the United Arab Emirates, terminal facilities.

This type of expansion has progressed furthest in Greece. In 2014, Chinese premier Li Keqiang visited Piraeus, home of the country's largest port. He stated that China would be a "long term" investor to build the port into "a gateway of China to Europe." By June 2016, COSCO had gained control of the Piraeus Port Authority SA (PPA), the publicly listed company that the Greek state created to oversee the Port of Piraeus. Although Greece is an Organisation for Economic Co-operation and Development country, COSCO achieved this objective through the use of techniques typically employed in port transactions in developing countries. The success of this approach reflects the weak state of the Greek economy and the disarray and lack of clarity in the governance of Greek port assets, despite the Greek government's twenty-year effort to improve the efficiency of the country's ports.[22]

In 2016, COSCO was the only one of six parties to submit a bid in the final stage to acquire 67 percent of the shares of PPA; the Greek parliament approved the purchase in July 2016. This gave COSCO control of a public company listed on the Athens stock exchange in 2003 as part of Greece's decades-long effort to revitalize its seaports. (The Greek state retained 74.14 percent of the shares of PPA at the time of the stock exchange listing.) The most valuable asset from PPA is a contract from the Greek state to operate Piraeus Port for forty years in exchange for an annual concession fee of 2 percent of the port's gross revenue. Greece granted the contract to PPA in 2001 when it created corporatized, state-owned port companies to develop Piraeus and Thessaloníki.[23]

The 2016 sale constituted a "master concession" form of privatization of the state-owned port company; it enabled the private investor, COSCO, to act as owner, regulator, manager, and operator of the entire port. Although in this model ownership of the land is not transferred and the state retains the right to terminate the concession (under certain conditions), the private concessionaire's discretion effectively supplants public control over the port. Master-concession privatizations usually are found only in developing countries, and thus are rare for European ports.[24] Greece opted to grant a master concession because of the severity of the economic problems facing the country in the aftermath of the 2008 financial crisis. COSCO offered €368.5 million, with €280.5 million payable immediately for a controlling 51 percent stake in PPA, and another €88 million for the remaining 16 percent of the shares, to be deposited in an escrow account. The additional shares are to be transferred when COSCO completes the €350 million in investments it has committed to make within a decade, with the majority to be spent on improving infrastructure for cruise ships and passengers and €55 million on upgrading ship-repair facilities at the port.[25] On completion of the transaction, the Greek state will retain approximately 8 percent of the equity in PPA, with private investors composing the remaining shareholders.[26]

The acquisition of the stake in PPA consolidated COSCO's control over a port in which it had been investing since 2009. In 2009, Piraeus Container Terminal SA (PCT), a subsidiary of a COSCO predecessor company, won a contract to operate PCT Pier II and to build and operate a new section of the port, Pier III. Volume at the Piraeus container terminals under COSCO's management has increased significantly. Even as Greek GDP fell by 25 percent from 2010 to 2015, Piraeus Port overall became the eighth-largest containerport in the EU, whereas previously it had not been among the EU's fifteen largest. The increase stemmed almost entirely from COSCO's PCT operations. In 2010, PCT held a market share of 45.3 percent of Greek container volume; PPA, the remaining publicly operated terminal pier at Piraeus, held a 34 percent share; and Thessaloníki Port held an 18.1 percent share. Five years later, in 2015, the PCT market share had nearly doubled, to 81.5 percent, while the PPA and Thessaloníki shares decreased to single digits (7.9 and 9.4 percent, respectively). The increase was attributable mainly to transshipment traffic—that is, movement of goods through the port terminals on the way to destinations in the EU via state-owned rail systems that were completed subsequent to COSCO's assumption of operating the PCT assets. This transshipment traffic represented business from multinationals such as Hewlett-Packard that signed contracts with PCT to transfer containerized intermediate products to distribution and assembly centers in the EU.[27]

Subsequent to the approval of its acquisition of the PPA stake, COSCO has continued to assert control over Piraeus Port, leading in one instance to a conflict between COSCO and the Greek state over governance of the port company. At the annual meeting of PPA in July 2017, the Greek state fund holding a 23.14 percent stake in the company opposed COSCO's proposal to amend an article of the company's charter so as to include continental China and Hong Kong among permitted locations for PPA board meetings. According to Greek business media reports, the Greek state requested the meeting be extended to allow Greek state legal counsel to examine concerns that holding board meetings in China might constitute a de facto change of the company's domicile. The Greek state ultimately voted against the amendment, but the change was made; COSCO controls a majority of the company, and major Greek and foreign institutional investors with stakes in PPA voted in favor of the change. A total of 82.8 percent of shares were represented at the meeting, and of those represented, 62 percent—including those held by shareholders such as Lansdowne Partners and BlackRock, and Greek fund-management companies Delos and Alpha Trust—voted to include China and Hong Kong among possible board meeting locations. Greek media reports indicate that the state is continuing to study the matter to clarify which country's legal system would prevail over decisions made in China or Hong Kong.[28]

The conflict over governance of Piraeus Port came shortly after other actions suggesting that COSCO plans to exert strong control over key assets in its expanding maritime network. Shortly after acquiring a shareholding stake in SIPG, COSCO in June 2017 announced two agreements involving COSCO, PPA, and the Port of Shanghai, intended to increase the volume of container traffic from China to the EU. COSCO chairman Xu and SIPG chairman Chen Xuyuan traveled to Piraeus to execute the agreements. The shipping and port executives were accompanied by a CPC delegation led by Han Zheng, a member of the Political Bureau of the CPC Central Committee and secretary of the CPC Shanghai Municipal Committee. Politically, the framework agreement and memorandum of understanding (MOU) between COSCO and SIPG underscore the significance of Piraeus in China's strategic maritime network and the willingness of China's top leadership to develop the Greek location. In COSCO's announcement of the new arrangements, Han said the pact was responsive to the instructions of President Xi Jinping to make Piraeus a key component of the BRI by building the port into the largest site in the Mediterranean for the integrated shipping of containers through land and sea transport routes. The announcement pledged that the CPC Shanghai Municipal Committee and the Shanghai municipal government would support the development of COSCO "so that this SOE can make full use of its advantages and better serve and implement national strategies."[29] Illustrating the importance of the commercial maritime network to China's national strategy, Han was named one of the seven members of the Politburo Standing Committee of the CPC at the Nineteenth National Congress of the CPC in October 2017, and in March 2018 was appointed executive vice-premier of the State Council, a role that is likely to include oversight of the National Development and Reform Commission, the agency responsible for China's long-term economic-development strategy and industrial policy.[30] The economic aspects of the agreement between PPA and SIPG concentrate on cooperation on funding, port building, training, and technical assistance; this agreement also contemplates consolidation of joint planning for promotion campaigns aimed at increasing the use of the two ports to raise use of their cargo-handling facilities, including by jointly negotiating with shipping companies to increase traffic on regular routes between Piraeus and Shanghai.[31] Also in June, COSCO signed separate agreements with the Shanghai municipal government aimed at increasing COSCO's involvement in building out Shanghai's shipping and logistics capabilities, expanding construction of ports and logistics terminals in foreign countries targeted for connection to the Yangtze River Economic Belt, and continuing the reform of SOEs and assets by encouraging linkages among port and shipping companies. Demonstrating one aspect of the connectivity for which the BRI calls, the PLAN's Naval Task Group 150, consisting of the missile destroyer *Changchun,* missile frigate *Jingzhou,* and supply vessel *Chaohu,* made a four-day visit to Piraeus in July, just weeks before the deployment of PLAN sailors to China's port in Djibouti removed any doubt about whether China intended to use the African facility as a military base.[32]

TRENDS IN GLOBAL SHIPPING

Foundations of Global Container-Shipping Alliances

COSCO's announcements have made increasingly clear the company's intent to exercise control over its investments in port properties by using the economic leverage that the company's alliances provide. In announcing its controlling investment in the Spanish port company NPH, COSCO cited the now-standard claim that the acquisition was partly a measure to implement the BRI, but added that the transaction marked significant progress toward the group's further improving its overseas port network; strengthening the control and management of its ports and terminals; and, more importantly, bringing into full play the synergies between the group's port assets and the container fleet of China COSCO Shipping Corporation, which it identified as "the ultimate controlling" entity of COSCO Shipping Ports Limited, and the Ocean Alliance.[33] As COSCO Shipping Ports became the controlling shareholder of NPH, the company announced that it would "further optimize its presence in Europe and rest of the world," and after completion of the transaction, COSCO stated, Noatum's ports in Valencia and Bilbao would "enjoy business support from the Ocean Alliance, including COSCO Shipping Lines."[34]

The Ocean Alliance is one of three consortia that major shipping lines formed in 2016 in response to the decline in container traffic and shipping rates following the 2008 financial crisis. The alliances became operational in April 2017.[35] The Ocean Alliance is made up of COSCO; CMA CGM SA of France; Evergreen Line of Taiwan; and Orient Overseas Container Line, based in Hong Kong. The other two alliances are the 2M Alliance, made up of the Danish Maersk Line and Switzerland-based MSC Mediterranean Shipping Co. SA; and THE Alliance, made up of the German line Hapag-Lloyd, the Taiwanese line Yang Ming, and three Japanese companies—Mitsui O.S.K. Lines, Nippon Yusen Kaisha Line, and the K Line. THE Alliance was to have included Hanjin Shipping before the bankruptcy and demise of that South Korean carrier.

An analysis of the new alliances by shipping industry consultancy Drewry shows that the Ocean Alliance emerged as the winner of the industry reshuffling, with its members having a total of forty loops spread across seven east–west trade routes; THE Alliance has thirty-two services and 2M has twenty-five. Each alliance also has a standing lineup of port calls, voyage frequency, and speed. The primary basis of the Ocean Alliance's commanding position is its seven services offered from Asia to the Middle East and the Red Sea; THE Alliance offers only one and 2M offers none on that route. A similar situation holds for service from Asia to the west coast of North America: the Ocean Alliance offers thirteen, THE Alliance eleven, and 2M just five. In the eastern Mediterranean, the three alliances make forty-two port calls across nineteen ports, with most receiving just one or two; Piraeus is the busiest, with seven calls. Valencia, in Spain, where COSCO recently acquired control of the port authority, is served most frequently of the thirteen ports receiving alliance ships in the western Mediterranean, receiving ten weekly calls from alliance ships. In total, the Ocean Alliance plans to deploy about 350 container vessels, with an estimated total capacity of 3.5 million TEUs.[36]

The business and maritime media portray the process that gave rise to these three configurations of the world's largest shipping companies as an organic one, but this elides the significant part that Chinese antitrust regulators played in determining which shipping lines could cooperate with each other, and thereby the memberships of the shipping alliances that went into effect in 2017. The Chinese Ministry of Commerce (MOFCOM) in 2014 applied the Anti-Monopoly Law (AML) adopted in 2008 to block the proposed formation of an alliance (known as P3) of Maersk Line, MSC Mediterranean Shipping, and CMA CGM, on the grounds that by going beyond the scope of vessel-sharing arrangements common in the industry the proposed alliance would enhance significantly the market power of the members and have an anticompetitive effect on shipping routes from Asia to Europe.[37] The MOFCOM action spawned intensive analysis of Chinese competition law and the allocation of powers among MOFCOM, the National Development and Reform Commission (NDRC), and the State Administration for Industry and Commerce. The Chinese AML requires MOFCOM to take industrial policy concerns into account when exercising supervision of mergers and business combinations, and, although industrial policy alone was not the motivation for MOFCOM's decision, legal experts view MOFCOM's prohibition as a striking example of China's application of the law, meriting a place on the top-ten list of major events in the global shipping industry; it was one of only two proposed transactions that the agency had blocked as of September 2016, underscoring that national economic concerns played an important role in the decision.[38] China's attention to the potential competitive impact of the proposed shipping alliance on Chinese entities reflects the country's policy of "industrial capacity cooperation." The NDRC has held press briefings to promote the export of Chinese industrial capacity, equipment, technology, and standards as an element of BRI agreements, extending a diplomatic concept that Premier Li introduced in 2015 as an element of SOE reforms.[39]

A French Connection Bolsters COSCO's Shipping Alliance

China's prohibition of the P3 alliance surprised the participants and the shipping industry.[40] But the decision only delayed the consolidation of the container-shipping industry; the latest major step in that process came with the formation late in 2016 of three shipping alliances aimed at better managing excess container capacity, a problem exacerbated by the bankruptcy of the South Korean line Hanjin. China COSCO Shipping became the dominant company in the Ocean Alliance, which notably includes France's CMA CGM, previously a proposed member of the scuttled P3 group.

The current CMA CGM was formed from Compagnie Maritime d'Affrètement (CMA), founded in 1978 by French shipping entrepreneur Jacques Saadé, and Compagnie Générale Maritime (CGM), a French state-owned company that the French state privatized in 1996 by awarding operation of CGM to CMA. The two companies formally merged in 1999.

CMA CGM has operated in China since it opened an office in Shanghai in 1992.[41] The company's ties to China have broadened and deepened over the past several years. In 2013, as part of an effort to restructure its debt, CMA CGM sold 49 percent of its container terminal subsidiary Terminal Link to China Merchants Holdings International for €400 million.[42] Competitive pressures on global shippers increased, as reflected in the unsuccessful attempt to form the P3 alliance in 2014. The linkage between China and CMA CGM deepened in 2015 when the Export-Import Bank of China (CEXIM) agreed to provide CMA CGM with up to a billion dollars in loans or export credit insurance to finance the company's future purchases of vessels and containers from Chinese suppliers. Historically, CMA CGM had ordered most of its containers from the Chinese group CIMC, and in 2015 it began to take delivery from Chinese shipyards of some of the world's largest containerships, starting with three 18,000-TEU vessels, which at the time were the largest ever built by Chinese shipyards. Simultaneously with receiving the CEXIM financing, CMA CGM entered into a strategic partnership agreement with China Merchants Holdings to evaluate infrastructure and port-related logistics projects jointly. A public event to mark the agreements, held at CMA CGM's headquarters in the French port city of Marseille, included the attendance of Chinese premier Li Keqiang in an official capacity to meet with France's then–foreign minister Laurent Fabius. At the time, CMA CGM claimed to be the first company to sign an agreement with a Chinese company to pursue investments under the BRI.[43]

The collaboration between CMA CGM and Chinese companies has increased and broadened since 2015, in shipbuilding, terminal operations, and port investment. In the third quarter of 2017, CMA CGM signed a letter of intent with two Chinese shipyards (Hudong-Zhonghua Shipyard and Shanghai Waigaoqiao Shipbuilding) to build nine 22,000-TEU containerships, the largest vessels to date. South Korea's three large shipbuilders—Hyundai Heavy Industries, Samsung Heavy Industries, and Daewoo Shipbuilding & Marine Engineering—also bid for the $1.44 billion contract. The decision evoked considerable surprise in the shipbuilding industry because South Korean companies previously had built most large containerships, and CMA CGM's awarding of the order indicated that China was making substantial progress at building ultralarge container vessels with the latest navigation, communication, and environmental- and energy-management capabilities. Shipbuilders are suffering a prolonged decline in new orders, leading to the closure of many yards. Shipping analysts consider the new ships that CMA CGM has ordered to be high value–added vessels. They will have dual-propulsion systems that can operate on either LNG or fuel oil and will meet stricter international regulations on emissions, indicating to sources in the shipbuilding industry that Chinese shipyards' technology and price competitiveness have caught up to or surpassed those of South Korean shipyards.[44]

In January 2017, CMA CGM's terminal unit, CMA Terminals Holdings, signed an MOU with COSCO Shipping Ports in which each company committed to increase businesses and services at ports and terminals where Ocean Alliance vessels make port calls. The French company issued a statement that both entities wished to create more opportunities in global port investment and operations, but did not provide further details on the agreement. Nonetheless, the agreement builds on CMA CGM's international expansion of its terminal operations, an effort that is supportive of COSCO's strategy. In 2016, CMA CGM paid $2.4

billion to acquire Neptune Orient Lines (NOL), a Singapore-based shipping and terminal operator that was the largest shipping company listed on the Singapore Exchange. Acquiring NOL gave CMA CGM market leadership on transpacific routes to the west coast of North America, a competitive advantage now enjoyed by the Ocean Alliance, in which it is a member.[45] With the NOL transaction, CMA CGM relocated its Asian headquarters from Hong Kong to Singapore, where the PSA Singapore Terminal is the world's second-largest containerport (after Shanghai), handling nearly thirty-one million TEUs in 2016. PSA Singapore is the largest terminal operation of PSA International Pte. Ltd., a subsidiary of Temasek Holdings, the Singapore state sovereign wealth fund. The relocation highlighted the increasing strategic importance of Singapore as the commercial shipping industry consolidates into a few large groups seeking to maximize efficiency by running ever-larger vessels between a declining number of ports with automated terminals and logistics connections. In early 2017, five major shipping lines relocated their operations to Singapore from Port Kelang in Malaysia; with large container vessels already berthed in Singapore, customers could eliminate the added time and cost of shipping goods for ocean transit the additional six hundred kilometers to Port Kelang.[46] Subsequently, CMA CGM declared its intent to make Singapore its primary Asian hub, and it initiated a joint venture with PSA that uses container yard automation technology to serve the megavessels of CMA CGM with some of the fastest container-moving rates in the industry.[47]

COSCO is closely involved in the development and deployment of port- and terminal-automation technologies. Qingdao New Qianwan Container Terminal at Qingdao International Port (QIP) in northern China became Asia's first fully automated container terminal—using automation for both crane-ship operations and the movement of containers from dock to yard—with its servicing of the 13,386-TEU *COSCO France* on May 11, 2017. COSCO in January had increased its shareholding in QIP to 18.4 percent by acquiring a 16.8 percent stake as part of a strategic accord to develop the port into a major hub in northeastern China. According to shipping publications, QIP officials have claimed in broadcasts for the China Global Television Network that the automated terminal reduces labor costs by 70 percent and increases efficiency by 30 percent, because automated cranes and driverless trucks operate day and night.[48] Shanghai International Port in December 2017 began operation of what would be the world's largest automated terminal, the Yangshan Deep-Water Port, designed ultimately to handle 6.5 million standard containers per year.[49]

Perhaps the most significant role of CMA CGM in China's maritime expansion is the company's position as a member of the consortium that won the bid to acquire a 67 percent controlling stake in the publicly listed port company that holds the concession from the Greek state to operate the port of Thessaloníki. The

CMA CGM subsidiary Terminal Link has a 33 percent stake in the consortium, with 47 percent being held by German investment firms Deutsche Invest Equity Partners GmbH and the remaining 20 percent by Belterra Investments Ltd.[50] Although Greek media reported concerns over Belterra's possible Russian ties, the consortium completed the purchase in March 2018 and has garnered local support, with the Foundation for Economic & Industrial Research, a nonprofit research organization established in 1975, reporting that business from Piraeus and Thessaloníki could increase Greek GDP by up to €5.6 billion annually.[51]

CHINA'S PROGRESS—SO FAR

China's Maritime Expansion: Unprecedented Aggressiveness

Chinese expansion in the shipping and port sectors not only is accelerating in pace; it also is occurring with an unprecedented aggressiveness. The primary entities engaging in the expansion operate under a radically different set of assumptions from their non-Chinese competitors, and are able to act more decisively and take on greater financial risks than can firms operating without the full credit and political support of their home state. In the view of Neil Davidson, the senior analyst for ports and terminals at Drewry, "Chinese players are more comfortable with risk than the established international operators right now, and have a geopolitical strategy rather than a purely financial one. They are snapping up assets and opportunities and have the appetite and financial clout to take many more in the coming years." COSCO, which already has enhanced its competitive position significantly, is projected to add more port terminal-operating capacity than any other global terminal operator over the next five years, in large part because of its acquisitions of Noatum and the container terminals owned by recently acquired Orient Overseas.[52]

While its activities are the most extensive—covering shipping, ports, terminals, and transport network development—COSCO is not the only Chinese state-owned company actively acquiring ports and related assets. Chinese entities made more than half of all acquisitions by global/international terminal operators in the year ending in mid-2017.[53] While COSCO was the primary actor, other transactions were undertaken by China Overseas Port Holdings and China Merchants Port Holdings (CMPH); the latter added "Port" to its name in 2016 to reflect the company's reorientation toward acquiring and developing ports around the world.[54] CMPH is the largest publicly listed port operator in China in terms of container throughput, with a market share of roughly 33 percent in 2016; like COSCO, CMPH owns part of Shanghai International Port Group, with a 25.15 percent stake as of June 2017.[55] Last September, CMPH agreed to buy 90 percent of TCP Participações SA, which operates the container terminal concession in Paranaguá, Brazil's second-largest containerport, for approximately $924 million. Financial news media reported that the purchase price valued TCP at 14.3 times the company's annual earnings before accounting for interest, tax, depreciation, and amortization (EBITDA), higher than the estimated value of thirteen times EBITDA that had been expected.[56]

In instances such as the TCP case, Chinese port and shipping SOEs have acquired assets from Western institutional investors that typically do not own shipping lines that can be rerouted to improve the economic prospects of the port assets. For example, as noted previously, COSCO Shipping Ports acquired 51 percent of Noatum Port Holdings, a Spanish-incorporated company, from Truria Port Investment Holdings, a Spanish-incorporated holding company for assets principally engaged in terminal operations and owned by institutional investors; a 67 percent share is advised by JP Morgan Global Alternatives, and 33 percent by APG Asset Management NV. COSCO Shipping appears to have made a direct investment of equity capital in Noatum and to have provided the company with additional funding to strengthen its balance sheet, leaving the pension fund investors with an undisclosed share of the company's equity.[57] APG is an asset-management entity headquartered in the Netherlands that primarily advises one of the largest pension funds in the world, Stichting Pensioenfonds ABP, which invests the pension assets of Dutch public-sector employees. The two investors acquired the Spanish port assets in 2010 as part of their infrastructure-investment programs, but financial results were constrained by labor and cost issues with Spanish stevedores. The assets of NPH include container terminals in Valencia and Bilbao, Spain, and two associated rail lines that required substantial investment to change the gauge of their tracks to correspond to EU standards so they could connect the port terminals to the EU distribution network. One of the top three containerports in the Mediterranean region, the Port of Valencia serves a hinterland with a 350-kilometer radius that accounts for nearly 50 percent of Spanish GDP and acts as the main gateway for the Iberian Peninsula; owing to that location, COSCO Shipping Ports believes Valencia is well situated to serve as a transshipment hub for western Mediterranean markets, and in April 2017 Ocean Alliance ships began to switch from other terminals in the area to Noatum's Valencia terminal.[58]

Financial Considerations of Chinese State-Backed Acquisitions

Some analysts have questioned whether Chinese port and shipping players paid so much for some of the assets they acquired that those ports or terminals will not generate market-rate returns. But traditional investment concerns may not carry as much weight with Chinese state-backed companies when they acquire assets with capital supplied by China as they do for non-Chinese, non-state-owned companies, which must deliver competitive financial returns on assets if they are to obtain capital from private investors.

Drewry has suggested that COSCO Shipping Ports, COSCO's port entity, may have to write down the value of NPH, the Spanish port operator acquired in June 2017. The consultancy's concern stems from the difference between the cost of equity capital and the cost of debt. While the acquisition of the 51 percent stake in Noatum appears to have taken place at a favorable valuation in comparison with COSCO Shipping's terminal acquisitions over the past two years, Drewry notes, the value of Noatum includes a significant amount of goodwill—the difference between the value the buyer assigns to the acquired assets and the price paid to acquire those assets. As a result of COSCO Shipping's purchase, the amount of equity in Noatum's capital structure will increase, resulting in a lower value for the goodwill portion of Noatum's total value. In effect, the modest valuation of the port would appear to provide a cushion against adverse business conditions, but that cushion could be eaten up if the total value of the port must be written down. According to Drewry, COSCO Shipping Ports targeted a return of 10 percent for its investment in Noatum, assuming the concession for the key terminal that NPH owns in Valencia is renewed beyond 2031.[59]

China's allocations of capital to its port and shipping SOEs illustrate a material difference in scale between funding for an SOE engaged in a country's geostrategic expansion and the investment capital for purely financial purposes that is available to shipping lines and port operators with a purely commercial foundation. In January 2017, the Chinese state provided major financial support to COSCO to aid the development of its shipping and port network when the China Development Bank, the country's main provider of long-term loans, pledged to extend twenty-six billion dollars in funding through various unspecified financial products for OBOR projects that COSCO has undertaken through 2021, the period of China's Thirteenth Five-Year Plan.[60] COSCO previously received other funding from Chinese state financial institutions, including an eighteen-billion-dollar strategic-cooperation agreement announced in 2016 with CEXIM to support Chinese shipbuilding yards and accelerate optimization of the fleet structure to international standards. The agreement encompassed a commitment to finance construction of fifty ships, as well as to provide financing for mergers, acquisitions, and equity investments in other companies.[61]

To put the China Development Bank funding commitment in perspective, twenty-six billion dollars is nearly two-thirds the amount of money China allotted from its national foreign exchange reserves to fund the Silk Road Fund, and more than one-quarter of the entire capital of the Asian Infrastructure Investment Bank. For additional perspective on the difference between geostrategic national funding and the funding available to financial investors in ports or shipping assets, consider that the largest infrastructure funds available to institutional investors such as pension funds raise between eighteen and forty billion dollars, which must be deployed across many different sectors to comply with the diversification requirements of such investors—and therefore cannot be concentrated in one or two sectors that constitute a strategic national priority.

The 2016 merger of two Chinese shipping companies to create COSCO amounted to the commissioning of an SOE to carry out China's ambition to become a maritime power. The announcement of the equity transfers required among the several entities to form COSCO affirmed that the sole owner and controlling entity of the new China COSCO Shipping Corporation Limited was SASAC, an entity created in 2003 to supervise directly China's largest industrial concerns. CMPH, which holds the concession to operate Chinese port facilities in Djibouti, is 62 percent controlled by China Merchants Group, which, like COSCO, is wholly owned by SASAC.[62] State control was reinforced further during 2017, with the chairman of SASAC emphasizing the importance of SOEs as a mechanism for the government to direct the economy and achieve political objectives.[63]

Implications of China's Emerging Maritime Network

There is little doubt from the observable transaction record that a top priority for Chinese SOEs operating in the port, terminal, and shipping sectors is to acquire these assets aggressively and consolidate them into an integrated network that not only benefits Chinese commercial interests but advances Chinese maritime influence, in accordance with CPC priorities. The presentation of the 2016 results of CMPH confirmed three primary goals: to consolidate Asia, consummate Africa, break through Europe, and acquire new exposure in America; to capitalize on state-directed credit and political cover provided under OBOR to expand the ports network further; and, finally, to develop the Djibouti free-trade zone and enhance the company's "Port-Zone-City" integrated development model.[64] The aggressive expansion since 2016 reflects the objective stated in the official announcement of the creation of China COSCO Shipping, which declared that the merger was a "measure to materialize the Belt and Road Initiative and China's commitment to building a maritime power."[65]

Chinese investment in Greece's Port of Piraeus since 2009 has transformed the port into one of the most active in the Mediterranean, and has served as the leading edge of a sustained campaign to acquire port assets in southern EU countries. Shipping industry analysts warn that, given the importance of ports to host-country economies, the transactions are not only transport investments but sources of political leverage and influence that mark the emergence of China as a global maritime power, and that from this vantage point Chinese port investments must be viewed in the context of geopolitics.[66] COSCO's operations in the Mediterranean, for example, create the possibility of serving the U.S. East Coast via the Indian Ocean and Suez Canal instead of the Panama Canal or West Coast ports that must ship goods east by rail or road.[67]

China is supporting its overseas port network with additional investments in critical infrastructure, as well as communications efforts targeted at promoting favorable opinions of Chinese involvement. In Brazil, China is contributing fifteen billion dollars of a twenty-billion-dollar fund for infrastructure investment in the country, which is expected to help finance construction of railroads linking soy- and corn-producing areas in Brazil's interior to its ports; although Brazil has noted that companies receiving financing from the fund will not be required to buy materials from China, China will maintain a 3 : 1 share of the fund's capital.[68] In Greece, the China Development Bank agreed to an MOU with the Greek Public Power Corporation, the largest power producer and electricity-supply company in Greece, which is seeking to modernize the sector and build geothermal power plants; the agreement was reached shortly after State Grid Corporation, China's largest utility, acquired 24 percent of Greece's power grid operator for $356 million, bringing total Chinese investment in Greek port, telecommunications, and photovoltaic assets to $1.3 billion, according to MOFCOM.[69] In summer 2017, Athens News Agency, the Greek state's media arm, organized a New Silk Road Forum that characterized Chinese investment in Europe as an opportunity instead of a threat; the event was attended by twenty-five state news agencies from countries mostly in southern and central Europe, including Spain, Italy, Bulgaria, and Greece, where Chinese entities have invested in maritime assets and supporting infrastructure.[70]

This article has attempted to document that China has made significant progress in establishing and supporting the development of a maritime network consisting of ports, terminals, and commercial-shipping capabilities under the control of a handful of Chinese SOEs. At a time of stress in the container shipping industry, COSCO and CMA CGM—key companies in China's maritime network—display some of the best financial metrics in the sector, with both having reported positive earnings in the first half of 2017 and unit costs below average freight rates, and COSCO having the most cash on its balance sheet and the lowest share of debt among its competitors.[71] Perhaps the article's most significant contribution is to propose that the collective transactions of Chinese port and shipping SOEs now constitute an integrated network for Chinese maritime power expansion through commercial channels. In addition to fulfilling its explicit commercial purposes, certain key nodes of this network offer capabilities that could support noncommercial maritime operations, such as ship repair, specialized terminals to handle vehicles, deepwater berths, and terminals designed for distribution and refrigeration. COSCO in January 2017 announced a $620 million development plan for Piraeus that prioritizes the creation of the largest ship-repair yard in the eastern Mediterranean and construction of hotels and cruise ship berths to cater to Chinese tourists.[72] Such Chinese-controlled facilities increasingly are being reinforced by electrical, rail, and road infrastructure that is being built with Chinese funding, in both developing and developed countries.

This combination of ambitious investment in maritime logistics, generous financial support from state development banks, and powerful political cover from Beijing has secured China extraordinary public support from port host countries. Of particular importance is that Chinese entities have shown the ability to gain control of port assets that include quasi-governmental grants of power by Western countries over investment decisions in and around strategic port facilities in those countries. Using techniques more often employed with developing countries, China has taken advantage of lingering economic stress in developed countries and overcapacity in container shipping to gain control of privatized state agencies originally set up to bolster local economic development. The capabilities of the assets China has acquired, and their relationships to one another and other Chinese initiatives, afford decision makers in Beijing an unusual amount of control over a fundamental sector of the global economy and raise questions about the implications for all countries and firms that rely on the maritime domain. This conclusion suggests that further research into how China might use this power would be productive.

Any doubt about China's intent to use the military capabilities of its maritime network dissolved with the report that the United States had lodged a formal protest with China after an incident in which the Pentagon said Chinese personnel at the country's new military base in Djibouti had directed a military-grade laser beam at U.S. military aircraft flying near the American base in Djibouti.[73] Earlier in 2018, reports emerged that China plans to convert the port it is building in Gwadar, Pakistan, into a second naval base.[74]

The military aspect of Chinese maritime expansion now overshadows the development of Djibouti's commercial port. Concerns about continued access to the U.S. base increased in early 2018 after Djibouti's president terminated the contract of DP World to manage a container terminal that the United Arab Emirates–based company had built at Djibouti Port in 2006. The abrupt move sparked reports that Djibouti intended to grant a contract for a new terminal to CMA CGM, while buying DP World's 33 percent share of the terminal and turning operation of the older facility over to a struggling midsize Singaporean shipping line that entered a capacity-management alliance with COSCO late in 2017; DP World claimed it had not received an offer from Djibouti.[75]

New Headwinds

The tensions in Djibouti demonstrate that China's commercial maritime ambitions are starting to encounter headwinds as the expansion drive encroaches on the commercial—and military—interests of other nations. China faces several potential challenges, not least whether it will be able to continue to finance the enormous cost of acquiring, building, and operating a global port network. While ports in Europe and Latin America have viable commercial operations that help fund development being undertaken by Chinese companies, few of China's newbuild ports in the Indian Ocean appear economically viable in light of low port traffic at sites that are not on existing sea-trade routes, and even in cases such as the port of Hambantota in Sri Lanka, where a Chinese SOE took a ninety-nine-year port lease in exchange for canceling loans Sri Lanka had taken from China, China faces the prospect of funding a major maritime installation for decades to come.[76]

Other signs of resistance to China's port expansion are emerging. In January 2018, a Swedish town rejected a Chinese SOE's proposal to build a deepwater harbor owing to concerns about the environmental and security implications. In April, the EU and Italy alleged that Chinese criminal gangs are committing tax fraud by not reporting imports through Piraeus. Also in April, a German business newspaper reported that EU diplomats in Beijing had prepared a briefing for an EU-China summit that sharply criticized China's investments in ports and other strategic assets as a program intended to further Chinese interests, aid Chinese companies, and divide political consensus in the EU by investing in politically unstable countries. The EU had first raised such concerns at the BRI summit China staged in Beijing in May 2017; China rejected proposed EU amendments to a draft Sino-EU agreement on Silk Road cooperation, which reportedly was presented to EU delegates without advance consultation.[77]

Perhaps the single largest hurdle to China's port expansion is the linked questions of whether host countries—most of which are emerging market economies—will be able to repay Chinese loans and whether Chinese firms, which are mainly SOEs, can handle the high levels of debt they incurred to acquire port assets.[78] Pakistan—the single largest recipient of BRI funding, with $62 billion invested in projects, including a deepwater port at Gwadar—said in September 2018 that its new government, which faced a balance-of-payments crisis on taking office in July, plans to review or renegotiate agreements with China. Governments in other countries, including Malaysia, Sri Lanka, and Myanmar, also have expressed reservations about the terms of Chinese financing for ports and other projects that China is undertaking in their countries.[79] These challenges to Chinese infrastructure investment, while high profile, mainly have occurred in countries where elections have resulted in a change of government. While analysts expect such challenges to continue, China's role in infrastructure such as ports, roads, and power plants is unlikely to diminish in countries such as Pakistan, which has close diplomatic ties with China. Chinese state-backed lenders are likely to remain a primary source of funding for other emerging-market nations that may be unable to attract enough private-sector capital to undertake such projects or to meet the stipulations for transparency and project viability that the World Bank and International Monetary Fund require.[80]

Despite concerns about debt burdens, the leaders of most African countries attended the Forum on China-Africa Cooperation in early September in Beijing, where President Xi pledged an additional $60 billion in financing for African countries and promoted China's efforts to build ports and related infrastructure in Africa to enhance "common prosperity."[81] The meeting with these leaders produced numerous new investment agreements, but—perhaps more importantly—a Chinese state media campaign in the run-up to the event featured Chinese Africa experts extolling the benefit of economic ties with Africa, helping Xi counter blunt criticism of BRI spending by Chinese scholars who last summer questioned the cost of the global program.[82]

Even as some emerging-market countries are raising concerns about how they will shoulder their share of the cost of Chinese projects, developed countries are building investment ties with China. The EU's concerns about transparency appear to have been more formal than substantive, and despite the absence of an MOU meeting its stated conditions, the EU has deepened the cooperation of its official financial agencies with Chinese counterparts since the 2017 BRI Summit. At the twentieth EU-China Summit in Beijing, in July 2018, the European Investment Fund (EIF), part of the European Investment Bank Group, signed an MOU with China's Silk Road Fund—one of the financing vehicles established to advance the BRI—to facilitate joint investments through a program called the China-EU Co-investment Fund. According to the EIF, the coinvestment fund aims to develop "synergies between the Belt and Road Initiative and the Investment Plan for Europe," an EU economic-growth program commonly known as the Juncker Plan.[83] The EIF announced the first coinvestment in August: an undisclosed stake in a new fund managed by Cathay Capital, a private equity investment firm that counts as "cornerstone investors" the China Development Bank, which is directed by China's State Council, and Bpifrance, the French public investment bank.[84] Cathay invests in a wide range of health-care and technology companies, including JD Logistics, which provides logistics and e-commerce services to its parent company, JD.com Inc.—China's largest retailer.

There also are signs that the United States is beginning to recognize that China's commercial maritime expansion carries strategic implications that warrant a serious response. In late April, the Committee on Foreign Investment in the United States (CFIUS) raised national security concerns about COSCO's planned acquisition of shipping line Orient Overseas International. In addition to making COSCO the world's third-largest shipping company and increasing its influence within the Ocean Alliance—OOIL is also a member of the group—the acquisition would result in COSCO taking control of a highly automated container terminal that OOIL operates under a forty-year lease from Long Beach, California—the largest port in the United States, in combination with the nearby port of Los Angeles.[85] I argued in 2018 that the transaction presents CFIUS with an opportunity to slow COSCO's expansion by requiring COSCO to sell the Long Beach terminal to a company that neither is financed by Chinese sources nor is allied with any Chinese shipping or port SOEs, nor to any entity, such as CMA CGM, that is allied with COSCO through the opaque network of holding-company structures and strategic alliances that China is using to build its commercial maritime network.[86] In July 2018 it was reported that COSCO had signed a national security agreement with the U.S. Departments of Homeland Security and Justice that calls for ownership of the terminal to be placed in a trust whose principal trustee must be a U.S. citizen and not a shareholder of OOIL, and must be independent of COSCO.[87] The ultimate resolution of the situation could turn on how the United States determines whether a prospective buyer of the terminal is "independent" of COSCO.

Presuming that the terminal is sold to an entity independent from Chinese influence, COSCO's agreement to sell the Long Beach terminal prevents—for now—the Chinese SOE that is leading the development of China's commercial maritime network from establishing a beachhead on the U.S. mainland. But the situation illustrates that China's commercial maritime expansion poses new security challenges. In both developed and emerging nations, China has established a physical presence in strategically meaningful locations—ports—that provide a platform for establishing influence over host countries in the economic and political domains, as well as the capability to support Chinese far-seas operations in the security domain. Chinese companies, mainly SOEs, have moved inland from these coastal nodes, gaining control of ground-transportation networks, power-generation assets, and information-technology systems. In their capacity of serving commercial as well as military purposes, SOEs play a distinctive role in ensuring the security of China's expanding economic and strategic interests, developing port and basing infrastructure, and providing logistics and maintenance support to military forces deployed abroad; and, potentially, in carrying out peacetime naval missions, such as intelligence gathering and the replenishment of PLAN warships. In terms of logistics support abroad, COSCO has been the PLAN's leading supplier, providing Beijing with built-in shore-based support for the PLAN through a commercial enterprise structured to align with Chinese naval strategy, to an extent that leads some naval analysts to refer to COSCO as the fifth arm of the PLAN.[88]

China's commercial maritime expansion already is posing practical risks to the naval operations of the United States and its allies. At a recent conference in Haifa, Israel, on the future of maritime warfare in the Mediterranean, former

USN Chief of Naval Operations Admiral Gary Roughead said that U.S. naval vessels might not be able to call regularly at ports under Chinese management because of the risk that commercial port information-technology (IT) systems could be used to monitor or interfere with military systems and jeopardize U.S. information and cybersecurity.[89]

Such concerns have substantial foundation: the Piraeus Port Authority, which COSCO controls, in early 2018 assigned Huawei Technologies SA to redesign and replace the port's IT network and communications infrastructure.[90] A new port at Haifa is expected to open in 2021 under the management of Shanghai International Port Group, which has a strategic alliance with COSCO and PPA.[91] Under a 2017 agreement, Huawei is providing SIPG with hardware and software services, including storage, network hardware and integration servers, and cloud operating systems, for a global IT platform designed by Accenture.[92] Huawei, along with ZTE, was singled out as a U.S. national security threat in a congressional report in 2012, and the 2018 Defense Authorization Act bars U.S. government agencies and contractors to the U.S. government from using certain Huawei components and systems, and provided funding to U.S. agencies that need to replace IT equipment as a result of the restrictions.[93]

Concerns that port-management technology poses a cybersecurity threat illustrate how the maritime commercial realm—where the world's two largest economies and their naval forces increasingly are coming into close contact—is becoming a theater for protracted economic conflict. Both the United States and China are taking steps to organize their state regulatory, financial, and cyber resources to pursue their respective interests. In one of the most significant changes to the Chinese regulatory structure in the past decade, China elevated the power of its antitrust and market-competition regulators in March 2018 when it consolidated review and enforcement responsibilities that had been dispersed across three agencies and consigned them to a single new entity, the State Administration for Market Regulation (SAMR). Under the new structure, SAMR will be supervised directly by the State Council, placing the power to direct market structure and competition through antitrust matters at the same level as the MOFCOM and the NDRC. With its newly consolidated powers and a reported track record of intervening on China's behalf to "tip the scales in an economic dogfight," according to one major Western law firm, SAMR could prove a formidable asset for protecting China's national economic development going forward.[94]

The elevation of antitrust enforcement power to the ministerial level reflects China's view that counting on free markets to provide sufficient access to required resources is not a reliable strategy for ensuring the country's economic or national security.[95] To reduce exposure to market forces, Chinese leaders are aligning military and commercial resources—along the lines that led to creation of the Dutch East India Company, when sixteenth- and seventeenth-century European monarchies began to pursue overseas trade and territorial conquest as a more rapid path to building the economic strength required to ensure national security than relying on domestic economic growth alone.[96]

The latest expansionary move by China's version of the VOC, COSCO, triggered a national security response from U.S. competition regulators. Whether China's commercial maritime expansion triggers other responses by U.S. civil or security agencies remains to be seen. But in the long term, most of China's port and shipping acquisitions will continue to occur outside the United States, and thus will not be subject to CFIUS review. By creating a global port network for ostensibly commercial purposes, China has gained the ability to project power through the increased physical presence of its naval vessels—turning the oceans that historically have protected the United States from foreign threats into a venue in which China can challenge U.S. interests. Domestic economic challenges and resistance from disgruntled host countries could slow China's port-buying spree and diminish the political influence that comes with economic power. But, for the moment, China's maritime expansion is continuing despite headwinds. With China's ships of state, both commercial and military, calling at Chinese-controlled ports around the world, the United States no longer can assume that its maritime supremacy will remain unquestioned forever.

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EXHIBIT 76

10 YEARS MERICS Getting China right.

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Tracker | China Global Competition Tracker Sep 30, 2021 | 5 min read

COSCO takes stake in Hamburg Port terminal

Chinese state-owned firm, COSCO Shipping Corporation Limited (COSCO) has gained a foothold in Hamburg, Germany's largest seaport.

On Sep 21 it was confirmed that COSCO subsidiary, COSCO Shipping Ports Limited (CSPL), will take a 35 percent stake in Container Terminal Tollerort GmbH (CTT). Antitrust authorities have yet to approve the deal.[1,2,3]

HHLA, which saw volumes at its Hamburg terminals fall 7.2 percent in the first three months of 2021,[4] announced in June that negotiations were underway with COSCO. HHLA hopes that additional traffic and infrastructure investment will flow from a strategic partnership with COSCO, while COSCO seek linkage effects for shipping services through the operation of its own global terminal network.[5]

A state champion aligned with Beijing's maritime ambitions

COSCO is the world's third largest container carrier measured by capacity, and the fifth largest port terminal operator in terms of throughput.[6,7] It was born in its current form, through the complicated merger, in 2015-2016, of COSCO with its rival, China Shipping Group (CSG), emerging as a formidable national champion.[8]

COSCO's ownership structure is a hybrid of state owned and public company. The firm's global expansion is in line with Beijing's interests, and its growth has been facilitated by access to state capital,[9] though it can be difficult to disentangle COSCO's political and commercial drivers.

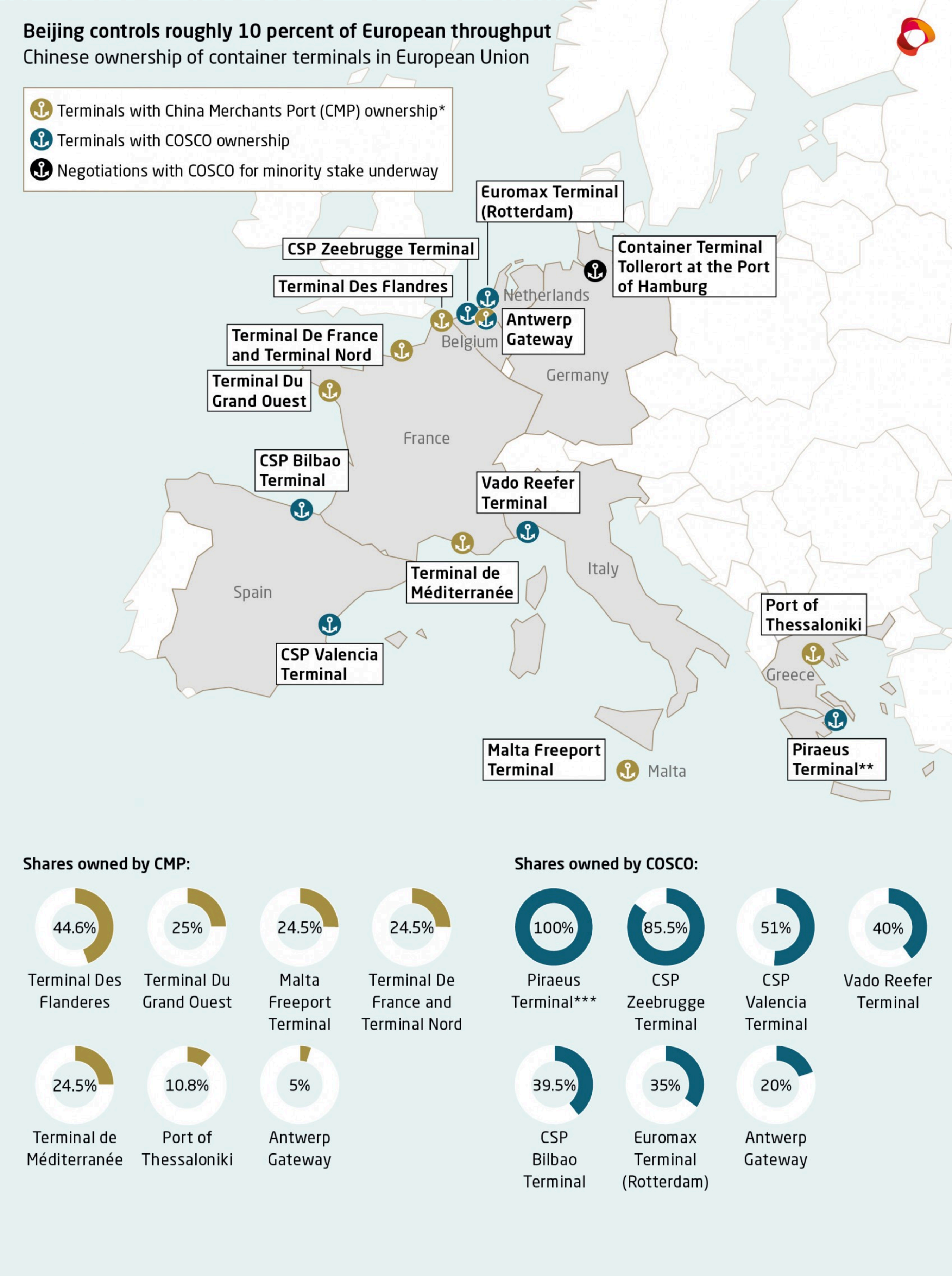
Beijing's declared ambition of becoming a global "maritime power"[10] includes the development of China's maritime industries and merchant navy – a strategy that is clearly in line with the interests of COSCO's executives and shareholders.

Chinese firms control 10 percent of European shipping

There are three Chinese companies involved in European ports: COSCO, China Merchants Port Holdings Company (CMP) (招商局港口控股), which is the world's sixth largest terminal operator, and Hutchison Port Holdings Limited (Hutchison) – a private Hong Kong group that is the world's number two operator. Of these, COSCO is the most relevant actor – it is the only operator that is also a shipping carrier, and it is the only state-owned Chinese actor with controlling shares in European terminals.

COSCO achieved its ambition of operating its own port in Europe in 2008 when, facilitated by the global economic crisis, it gained a 35-year lease to manage piers 2 and 3 at the Athens port of Piraeus. In 2016, the Greek government sold its majority stake in the Piraeus Port Authority (PPA) to COSCO, as Greece was under pressure to repay debt to the EU and International Monetary Fund.

Although the takeover has not been without controversies, Piraeus under COSCO's leadership has become the busiest port in the Mediterranean and the fourth busiest in Europe, up from 17th place in 2007.[11]


Beijing controls roughly 10 percent of European throughput
Chinese ownership of container terminals in European Union
Terminals with China Merchants Port (CMP) ownership*
Terminals with COSCO ownership
Negotiations with COSCO for minority stake underway
Euromax Terminal (Rotterdam)
CSP Zeebrugge Terminal
Container Terminal Tollerort at the Port of Hamburg
Terminal Des Flandres
Netherlands
Antwerp Gateway
Belgium
Terminal De France and Terminal Nord
Germany
Terminal Du Grand Ouest
France
CSP Bilbao Terminal
Vado Reefer Terminal
Italy
Terminal de Méditerranée
Spain
Port of Thessaloniki
CSP Valencia Terminal
Greece
Malta Freeport Terminal
Malta
Piraeus Terminal**
Shares owned by CMP:
44.6% Terminal Des Flanderes
25% Terminal Du Grand Ouest
24.5% Malta Freeport Terminal
24.5% Terminal De France and Terminal Nord
24.5% Terminal de Méditerranée
10.8% Port of Thessaloniki
5% Antwerp Gateway
Shares owned by COSCO:
100% Piraeus Terminal***
85.5% CSP Zeebrugge Terminal
51% CSP Valencia Terminal
40% Vado Reefer Terminal
39.5% CSP Bilbao Terminal
35% Euromax Terminal (Rotterdam)
20% Antwerp Gateway

*CMP owns shares in European ports through its 49% stake in Terminal Link.
**As well as full ownership of PCT, COSCO owns a 67% stake in Piraeus Port Authority.

Source: MERICS

EU concerns about Chinese firms' expansion

In Europe, the boom in Chinese investments that followed the global economic crisis has given way to wariness and new regulations for screening foreign direct investments. As ports have "critical infrastructure" status, Chinese investors' interest in them has received special scrutiny.

- The network effects of Chinese port acquisitions could be significant – The market conditions exist for China to expand its control over European terminals; some scenarios suggest Chinese port operators could gain shares that would give control over as much as half of European throughput. Although the expansion is commercially driven, there are inevitable political consequences to greater Chinese control over global shipping flows, as there are risks to the strategic autonomy of European policymakers and their ability to control supply chains.
- Ownership creates indirect influence – Beijing has recently used freight traffic as a coercive tool against Lithuania. However, diverting cargo away from Piraeus would be a dramatic act of self-harm.[12] While it is not always obvious which levers Beijing would pull to translate its economic significance into influence over policymakers, Piraeus is Greece's main seaport and an important piece of its economy.
- China-owned ports in Europe will not become dual-use facilities but can still pose security risks – Beijing is not beyond hiding strategic military intent behind commercial activities but transforming port interests into military facilities takes many years and is not possible without the explicit backing of the host country. Greece remains a sovereign state and COSCO's concession rights to Piraeus would be irrelevant in a state of war. A more valid concern is that commercial port infrastructure fitted by Chinese companies could be used for intelligence gathering.
- Acquisitions may be detrimental to labor rights - The main complaint against COSCO in Piraeus was that it casualized employment, undermined the unions and intensified work without accompanying protections. In Germany, the Ver.di union has criticized negotiations with COSCO, saying the Hamburg acquisition would undermine social justice in the future development of the port. However, the shift towards a worker-hostile, just-in-time business model is an industry wide phenomenon. In their statement, Ver.di noted that employment conditions are being "increasingly determined by a small, global group of shipping companies."

Chinese firms are in the market for European terminals. Many independent terminal operators see such deals and sales as making sense in order to guarantee cargo flows. Shipping industry consolidation has generated an oligopoly of three shipping alliances with significant sway over the fortunes of European ports. COSCO is a dominant member of the OCEAN alliance, the largest of these three groups.

The trend in shipping is toward greater vertical integration and consolidation. By turning to COSCO, ports like Hamburg are responding to inescapable market pressures. However, these decisions are likely being made with limited consciousness or concern for the wider strategic consequences. COSCO is competing on an uneven playing field with the backing of the Chinese state, and its market dominance is a potential geopolitical tool for Beijing.

This pattern of consolidation may need to be interrupted in order to protect the resilience of European companies. Any measures taken will need to be enacted Europe-wide, as ports will be reluctant to pass up partnership opportunities when they risk seeing the benefits go instead to competing ports in neighboring member states.

Endnotes

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EXHIBIT 77

BELT & ROAD INITIATIVE

China's Trojan Ports

JOHN LEE

Beijing's systematic acquisition of European ports is not a precursor to Chinese militarism in Europe. But it is an important component of an ambitious and insidious strategy.

As China continues to project its presence, money, and influence into Western Europe, long-forgotten histories are resurfacing by way of analogy to the present challenge. According to one such narrative, Chinese strategy resembles that of the ancient Sea Peoples—a mysterious confederation that attacked territories in the East Mediterranean largely controlled by the Egyptian empire between 1200 and 900 B.C.E. The metaphor is an imperfect one. Not traditionally of the sea, China has long been a continental power, only now attempting to make the difficult transition to a maritime superpower. Its militaries are not making a beeline for Europe. Beijing is promising greater trade and economic cooperation, not threatening war.

A more appropriate metaphor from ancient history, however, *can* be used to describe Chinese economic activities. Beijing's offerings resemble the Trojan Horse that the Greeks used to enter and lay waste to the independent city of Troy. This is especially true when it comes to the buying up of European ports.

It is estimated that state-backed Chinese investors state own at least 10 percent of all equity in ports in Europe, with deals inked in Greece, Spain, Italy, France, the Netherlands, and Belgium. This is in addition to a growing investment portfolio of at least 40 ports in North and South America, Africa, the Middle East, Eastern Europe, Central Asia, South and Southeast Asia, Australia and the Pacific.

China's interest in European ports is defined and driven by the Belt and Road Initiative (BRI). While the BRI has both strategic and economic objectives, there is little prospect of a Chinese-invested port in Europe being turned into a military base for the People's Liberation Army Navy in the foreseeable future. Neither a 35 percent stake in the Euromax terminal at Rotterdam, a 20 percent stake in the Port of Antwerp (Europe's two busiest ports), nor even full ownership of Zeebrugge in Belgium is a precursor to Chinese militarism in Europe.

The more immediate concern is that Chinese interests in European ports represent but one component of a much more ambitious strategy—one designed to unfairly tilt the regional and global economic playing field in China's favor, introduce into Europe commercial processes and standards preferred by China rather than Western liberal democracies, enhance Beijing's leverage over certain European states to support policies favored by the Chinese Communist Party (CCP), and prevent any intra-EU consensus that might be critical of China's economic policies and authoritarian values.

The BRI is widely and accurately described as President Xi Jinping's flagship policy and China's most ambitious, comprehensive economic strategy since the Deng Xiaoping era. Promoted to the world in economic rather than strategic terms, and formally introduced by Xi in 2013, the BRI encompasses the "Silk Road Economic Belt" through the Eurasian continent and the "21st Century Maritime Silk Road," which links China with Southeast Asia, Oceania, the Indian Ocean Rim, Africa, and the Mediterranean. With respect to Europe, the plan is to link China with railways that go through Central Asia, Russia, and Eastern Europe and onward to Spain. The Maritime Silk Road extends from China to Southeast Asia, the Indian Ocean, and the east coast of Africa, then through the Suez Canal and into the East Mediterranean Sea.

In the March 2015 white paper entitled "Vision and Actions on Jointly Building Silk Road Economic Belt and 21st Century Maritime Silk Road," the most comprehensive official document yet issued on the BRI, China described its five goals as being policy coordination, facilities connectivity, unimpeded trade, financial integration and people-to-people bonds.

In practice, the BRI has no formal institutional structure or set of guidelines. Unlike the Asian Infrastructure Investment Bank (AIIB), which is a multilateral entity with established rules and processes, BRI terms for countries and individual firms are negotiated directly with either the Chinese government or with state-owned or state-sanctioned firms. Memorandum of Understanding agreements between China and other countries and commercial terms between firms under the BRI banner are not generally available to the public.

Moreover, many projects involving Chinese firms in the 65 or more countries along the BRI are often counted as BRI projects even if that project was not conceived with the BRI in mind, or preceded its formal announcement. Claims that the BRI could be a $4 trillion scheme should be understood with this caveat in mind. In this sense, the BRI is both a hugely ambitious, consequential concept and a significantly inflated one.

Even so, gaining designation as a BRI-designated project can be meaningful. Funding mechanisms for BRI projects have been established, including the AIIB and the $40 billion New Silk Road Fund. Joint ventures with Chinese firms under the BRI banner can open up funding from Chinese financial entities such as the China Development Bank, the New Development Bank, the Export-Import Bank of China, and the China Investment Corporation sovereign wealth fund. Funding from these sources for BRI projects are frequently less restrictive in initial phases of investment and are given on non-commercial terms. Chinese firms can also gain fast-tracked financial and regulatory approvals from domestic authorities when partnering with foreign firms on BRI-designated projects.

In the aforementioned white paper, China tells us its economic aim in funding and building infrastructure along the Eurasian continental belt is threefold: to export excess industrial capacity arising out of the fixed-investment explosion which occurred after the 2008 global financial crisis to overseas markets; to spur development in its impoverished western regions by connecting these regions to economies and markets to the west; and to form physical, digital, and financial networks with new and existing markets in Central Asia and Europe.

The BRI's so-called Eurasia Land Bridge Corridor concept extends from the east coast of China through to Western Europe. While Europe is at the far edges of the BRI in geographical terms, the former is essential for China. One purpose of the BRI is to bind consumer markets to Chinese exporters through the BRI's physical, financial, and digital networks, which lead back to China. In nominal terms, the European Union is the largest economy in the world and constitutes about 22 percent of global GDP. Importantly, it is also the second largest consumer market in the world and almost double China's size by that measure. Although the size of consumer markets in Southeast Asia and India are predicted to grow rapidly, Europe will remain the most important destination for finished goods throughout the BRI in the foreseeable future.

Moreover, Xi Jinping's "Made in China 2025" policy involves government subsidies and massive investment in research and innovation in sectors that fuse the physical, digital, and biological worlds, such as advanced manufacturing and materials. The aim is to lead in these future-oriented sectors and dominate global exports. For the moment, China cannot achieve this on its own and needs the technology transfers that come from joint ventures with advanced economy firms, especially from Europe. In Beijing's blueprint, advanced European markets will be major buyers of Chinese exports in these sectors. Without bringing Europe into the Chinese economic orbit through the BRI, "Made in China 2025" cannot succeed.

Why Worry

The European Union is China's largest trading partner, but China accounted for only 2 percent of total foreign direct investment (FDI) stock by the end of 2015 and 5 percent of the value of recorded projects in 2016, according to Eurostat and Ernst & Young figures. With respect to Chinese investment in European ports, a benign commercial logic is frequently put forward to pacify growing concern.

For example, many shipping companies tend to invest in ports around the world because ports offer far superior margins and better return on investment than the related container and freight business. Chinese companies can also point to significant commercial achievements associated with their European port investments. When China's COSCO Shipping Corporation took over the Greek container and passenger port of Piraeus in 2008, fewer than 900,000 containers passed through its facilities. In 2016, the figure reached 3.7 million containers. Piraeus has climbed up the world rankings of container ports: from 93rd in 2010, to 44th in 2015, to 38th in 2017.

Chinese firms are promising to achieve similarly impressive commercial outcomes for ports such as Venice. Importantly, China is offering Europe a package deal of benefits under the BRI brand. Chinese-invested ports will eventually be connected to the Maritime Silk Road and have direct networks to freight lines belonging to the Eurasian Land Bridge Economic corridor. This will offer European economies the opportunity to be linked to the entire BRI economic ecosystem, which begins in China and ends at the Mediterranean. The point is that Chinese investments in European ports are explicitly linked to the BRI and all that the Initiative seeks to achieve.

It is a good pitch, but there are reasons to be concerned.

First, the Chinese promises to build and expand the infrastructure around ports are made less attractive by the reality that Chinese projects tend to exclude local and international participation. According to the CSIS Reconnecting Asia database, 89 percent of contractors participating in Chinese-funded projects are Chinese companies. Only 7.6 percent are local companies, with 3.4 percent non-Chinese foreign companies. For projects funded by multilateral development banks, by contrast, 29 percent of contractors are Chinese, 41 percent are local firms, and 30 percent are non-Chinese foreign firms. Port investments and upgrades involve finance, design, construction and servicing, which are all activities Chinese firms provide at lower prices given the domestic advantages and assistance offered to them by Beijing. Understandably, Europeans feel uncomfortable with selling highly valuable assets if the spoils of development of those assets go to Chinese entities.

Second, there is growing discomfort with the close funding arrangements between Chinese firms and government-controlled financial entities. This is at odds with the European Union's relatively liberal notion of political economy, which depends on there being significant distance between the political and strategic objectives of the government on the one hand, and the objectives of commercial enterprises on the other.

A case in point is COSCO Shipping Corporation, which was given over $26 billion by the China Development Bank to invest in BRI-sanctioned projects in 2017. These firms are given loose lines of credit to advance government policies and not just to maximize their commercial success. Even if one counters with the argument that European countries can dictate the laws and regulations that apply to assets in their sovereignty territories, the suspicion is that such assets can be used to benefit the Chinese economy disproportionately.

For example, investment by the Chinese company COSCO Shipping in, and control of, Piraeus means the Greek port will cooperate with Chinese ports to boost synergies, as evidenced by a June 2017 agreement with Shanghai International Port Group to cooperate in project planning, staff training, and information exchange. As a complement to the Chinese purchase of Piraeus, Chinese banks provided loans to Greek shipping companies to build additional commercial vessels in Chinese shipyards.

Furthermore, it would not be lost on Europeans that China's "Made in China 2025" blueprint, and its associated industrial policies, are fundamentally mercantilist in nature: They are designed to enhance Chinese self-sufficiency in important strategic sectors and secure Chinese export dominance in the international market for these sectors. BRI networks promise to enhance the flow of goods, services, and information between China and BRI countries. In doing so, they serve to facilitate Chinese economic and industrial dominance. It is telling that China is promoting increased connectivity without undertaking significant domestic measures to remove what the European Union terms "significant market distortions." These include CCP control over the financial system and policies offering preferential treatment of domestic companies over foreign competitors. Chinese businesses in BRI-related sectors receive land at artificially low prices along with access to cheap energy, preferential access to capital, suppressed borrowing costs, and beneficial pricing for raw materials and commodities.

In terms of access to the Chinese market, it is worth noting that foreign investment in the most important and lucrative sectors of the Chinese economy is heavily restricted and restricted entry is via joint ventures—which leads to the new problem of large scale and state-sponsored intellectual property and trade secret theft. In addition to its still-closed capital account and discriminatory regulatory and antitrust laws, it is extremely difficult for foreign firms to gain permanent and meaningful footholds to thrive in Chinese industrial and consumption sectors, even as China is laying the ground for ever greater access to European markets.

Indeed, Beijing has not made a convincing case that improved networks throughout Eurasia exist to evenly spread the opportunity of globalization and share the spoils of greater economic integration. The BRI and China's interest in assets such as ports remain China-centric. China is paving the way to sell and buy what it wants, according to economic and strategic policies produced by the CCP. When Chinese firms negotiate opaque deals with European ones, the former begin with the largesse and non-commercial advantages that come from state assistance. The exchange is rigged from the start.

China is paving the way to sell and buy what it wants, according to economic and strategic policies produced by the CCP.

Third, Chinese firms must ultimately obey directives from Beijing. The network of ports and other logistical facilities in Europe, Africa, and Asia provides China with a high degree of operational self-reliance and capacity. Control of international supply lines and logistical processes gives a country political leverage if that country is prepared to use these capabilities for political ends. While there are restrictions on European countries and other liberal democracies against using commercial and civilian assets to achieve political ends, no such limitations exist in China. Indeed, it is a crucial part of the CCP's toolkit to use economic leverage to achieve both economic and non-economic ends.

China's official *Blue Book of Non-Traditional Security* (2014-2015), an annual volume produced by state-sanctioned academics and researchers, states that two of the purposes of the BRI are to mitigate American-led geopolitical machinations and ideas, and to promote a new international discourse and order that enhances China's national power and soft power. Investment in ports and other assets should be considered in the context of the concept of "strategic support states," which came to prominence amongst Chinese strategists earlier this decade. In a 2015 consensus of 50 Chinese scholars on China's periphery diplomacy in the Xi Jinping era, cultivating "strategic support states" is achieved through regional cooperation and providing economic and public goods as China expands westward. According to analysis by the Washington, DC research organization C4ADS, one of the principles of cultivating a "strategic support state" is ensuring "China has the ability and resources to guide the actions of the country so that they fit into [China's] strategic needs."

There is ample evidence to suggest this is not abstract strategizing by academic thinkers. In Pakistan, enormous Chinese investments, such as in the Port of Gwardar, have given the Pakistani economy an instant economic sugar high. But they have also burdened that country with debt that it cannot repay, and turned Pakistan into a long-term client state of China's. A similar situation is occurring in Sri Lanka. Unprofitable and debt-heavy projects such as the Hambantota Port has forced Sri Lanka into a $1.1 billion debt-for-equity swap with China, giving the latter long-term control of a military-capable port and considerable leverage over Colombo's foreign policy. Over the past five years, China has invested over $5 billion in Cambodia, a sum equivalent to about one quarter of the country's GDP, in return for Phnom Penh pushing China's interests in organizations such as the Association of Southeast Asian Nations (ASEAN). This includes a 100 percent ownership of the Koh Kong New Port. Like Pakistan and Sri Lanka, Cambodia cannot change course while it is caught in a Chinese-created "debt trap."

With respect to Europe, it is more difficult to purchase direct influence given that many European countries are better able to access diverse sources of capital, in addition to the presence of robust liberal-democratic institutions which are more difficult to corrupt. Even so, there have been opportunities. Unlike other Western European countries, Greece has openly welcomed Chinese investment, and Prime Minister Alexis Tsipras boasts of China's investment in the Port of Piraeus as the opening for "China's gateway into Europe." In 2017, Greece blocked an EU statement on Chinese human rights violations to the United Nations Human Rights Council, with a Greek official calling it "unconstructive criticism of China." This marked the first time the European Union has failed to make a statement to the UNHRC.

Another case is Hungary, which is seeking to position itself as Eastern Europe's "gateway to China," and is welcoming BRI-linked investment, including for the $3 billion Hungary-Serbia railway project that would connect the Chinese-run Port of Piraeus with the European heartland. Realizing that political obeisance is one pathway to receiving immediate financial largesse, Hungary has emerged as China's most enthusiastic spokesperson in Eastern Europe. For example, Budapest has strongly argued that the European Union should grant China's economy "market status." In 2017, Budapest derailed the EU consensus when it refused to sign a joint letter denouncing the torture of detained lawyers in China. Both Hungary and Greece remain unwilling to criticize Chinese actions in the South China Sea, thereby preventing the European Union from presenting a unified voice on this issue.

The concern here is not Chinese investments in ports per se, but rather China's tendency to link investment with political demands and expectations. This applies regardless of whether such investment is BRI-designated or not. However, BRI projects have become the sweetener for countries desperately needing an injection of capital and economic activity when it is not pouring in from other sources. For less economically competitive and less commercially attractive European countries like Greece and Hungary, dependence on Chinese capital can be subsequently used to create significant pressure on governments to alter policies that favor Chinese interests.

Fourth, China has used the lure of enormous infrastructure investments, including development of Greek ports, as gateways for economic development into the Balkans to divide and conquer the European Union. The main mechanism is the China-initiated 16+1 grouping, which includes sixteen Central and Eastern European states plus China. Eleven members of this grouping are also EU members.

In late 2016, China announced it had established a $11.1 billion Central and Eastern European (CEE) Fund to finance projects in the group-of-sixteen economies to support the BRI. An ulterior motive is to create an economic investment zone that will decide on investments according to China's rules and processes rather than the more stringent and transparent EU standards preferred by Western European states such as France and Germany.

Consider the case of Slovenia, which was promised a $1.5 billion financing package for a railway in exchange for a 99-year lease of the Port of Koper. In 2018, and in spite of raised eyebrows by Western EU countries, China and Slovenia signed a memorandum of understanding on cooperation in transport and infrastructure, which focused on integrating sea transport with the development of railways, motorways, and logistics as part of the BRI concept. This includes a cooperative agreement between the Port of Koper and China's Port of Ningbo-Zhoushan to increase trade between China and the CEE economies.

Although the CCE Fund remains underwhelming due to lack of confirmed funding and agreed projects, it indicates China's intention to circumvent EU rules and standards, or undermine broad support for them, by getting potentially recalcitrant EU members such as Greece and Hungary on its side. Serbia, a likely future EU member, has accepted large amounts of Chinese capital and in return is supportive of China's stance on issues such as Taiwan, the South China Sea, and human rights in Tibet and Xinjiang. Once again, and in this context, it is not the investment in port or other facilities per se which is of concern, but China's use of big spending promises to alter established EU norms and commercial standards for investment.

Not Quite the Sea Peoples, but Beware Chinese Bearing Gifts

China is now applying its well-tested South China Sea approach—gradually asserting *de facto* control and dominance through incremental actions, each of which will not provoke a robust counter response—in Europe. Similarly, China is using a divide-and-conquer strategy to prevent the European Union from taking a common stance against Beijing, much as it has done by offering largesse to Cambodia and Laos to prevent ASEAN from speaking with one voice.

However, unlike in the South China Sea, Chinese economic and investment policies toward Europe are not militarily threatening, are mostly legal (even if they undermine important commercial rules of the road,) and create some economic benefits for European partners, even if China will be the primary beneficiary. For these reasons, there is a legitimate economic role for Chinese firms, but with conditions.

In crafting a response, the European Union should remember that its leverage is more considerable than China cares to acknowledge. Even as a concept, the BRI would be greatly diminished without full European participation. China requires European cooperation to achieve Xi's goal of China becoming a "moderately prosperous society" by 2021, when the country celebrates the 100th anniversary of the formation of the CCP, and to become a "fully developed, rich and powerful nation" by 2049, when China celebrates its 100th anniversary as the People's

Republic of China. At the least, EU leaders should demand economic "reciprocity'" in terms of equal access and opportunity with respect to economic interaction with China.

It is essential that the European Union respond to China's divide-and-conquer approach and put pressure on countries such as Greece and Hungary to agree to a common set of guidelines with respect to screening investments (in ports and other assets) and how foreign-owned assets are run and operated. The contractual and financial terms of any sale or lease of a port must follow a set of guidelines adhered to by all EU states. Negotiations with foreign entities should adhere to the same levels of transparency as occurs between EU states. "Special" deals that include political and other commercially irregular terms must be rejected. Tendering processes must adhere to market-driven and commercial principles with respect to services rendered to third parties and the pricing of those services.

More broadly, all EU member states should take responsibility for protecting European interests, European rules, and international law, and the preservation of a regional and economic system which does not prioritize a China-centric view of globalization and entrench special advantages for China. While the European Union cannot alone alter Beijing's hierarchical view of the world and its perception of itself at the apex of that order, it can ensure Europe does not unwittingly help advance an alternative Chinese vision of economic globalization. Realization of that latter vision would have political, strategic and normative ramifications which would not be in Europe's own interest.

Finally, and although not part of Eurasia, the United States should not be a disinterested observer. Chinese port operators are likely obligated to collect and pass on important information to Beijing about the movement of American naval vessels, their maintenance activities and requirements, and may even monitor communications between these ships. The Chinese thus could access important details that could include the combat readiness of the ships, their munition stores, the logistics networks used by these vessels, and even clues with respect to tactics for naval patrols. This should surely concern the U.S. Navy, which regularly calls to ports such as Piraeus in Greece, Zeebruge in Belgium, and Valencia in Spain which are 100 percent, 85 percent, and 51 percent majority-owned by COSCO, respectively.

Ultimately, as the *Blue Book of Non-Traditional Security* suggests, the BRI is attempting to create an Eurasian and Indo-Pacific region that takes a China-centric view when it comes to economic practices and political norms, and which excludes the United States. Just as its regional strategic and military approach is to weaken existing alliances and ease the United States out of Asia, the BRI seeks to weaken economic links between the liberal democracies on either side of the Atlantic Ocean and to coax Europe toward acquiescence of Chinese standards and approaches. If the United States were to let that happen, it would be losing without even entering the fight.

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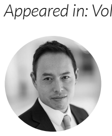

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EXHIBIT 78

https://www.wsj.com/articles/chinas-global-port-investments-give-rise-to-security-worries-11668330942

China's Global Port Investments Give Rise to Security Worries

The expanding network could make it easier for Beijing to service its navy, U.S. analysts say

By Niharika Mandhana Follow

Updated Nov. 13, 2022 9:29 pm ET

Security concerns related to Chinese investments in overseas ports are mounting as the country's firms acquire more stakes at shipping hubs around the world and geopolitical tensions rise.

Chinese companies have expanded investments at foreign ports in recent years and now run major container terminals in locations including Belgium, Israel, Spain, Sri Lanka and the United Arab Emirates. All told, Chinese and Hong Kong-based firms hold stakes in terminal leases or concessions at 95 foreign ports, according to research by Isaac B. Kardon of the U.S. Naval War College and Wendy Leutert of Indiana University.

More than 27% of global container trade last year passed through terminals in which leading China- and Hong Kong-based firms held direct stakes, data from maritime-research firm Drewry shows.

Last month, Germany approved China's state-owned Cosco Shipping Ports Ltd.'s purchase of a stake in a terminal at Germany's largest seaport in Hamburg.

Cosco is also developing a new port in Peru. Tanzania's leader has expressed interest in reviving a stalled project to build East Africa's largest port that involved China Merchants Port Holdings Co., another Chinese state-owned company.

American security analysts say the expanding network could make it easier for Beijing to service a Chinese navy that has grown and become one of Washington's biggest military concerns—without having to rapidly build an elaborate system of bases.

Many navies use commercial ports to refuel, pick up provisions and provide sea-weary sailors a break. But for China's navy, access to facilities run by the country's firms would make it easier, cheaper and more efficient to sustain fleets abroad.

Port investments give China greater influence over infrastructure critical to the global flow of goods. PHOTO: CFOTO/SIPA/REUTERS

China’s navy has stopped for replenishment or diplomacy at a third of the ports where Chinese- and Hong Kong-based firms have investments, according to the research by Mr. Kardon and Ms. Leutert. That includes stops at the ports of Alexandria in Egypt for repairs, Valencia in Spain for equipment maintenance, and Piraeus in Greece on goodwill visits.

The investments also give China greater influence over infrastructure critical to the global flow of goods—a potential liability for Western governments, some experts say.

Chinese companies secured half of all orders to build commercial ships last year and made nearly all shipping containers. They are also aggregating shipping data in ways that some in Washington worry could give Beijing access to information about rivals’ supply-chain vulnerabilities.

China’s Foreign Ministry, Cosco and China Merchants didn’t respond to requests for comment. The Foreign Ministry and Chinese state media have said in the past that Chinese port investments benefit host countries as well as China and shouldn’t be politicized.

Some officials and military analysts say the fears are overblown.

The Chinese navy can’t count on commercial ports during conflict because, although host countries may consent to refueling and repairing warships during peacetime, they are unlikely to give them access during war, they say.

Using Chinese port firms to delay or disrupt vital shipments to the U.S. or its allies would also deeply damage Beijing's credibility and economic interests.

Still, as distrust grows between the U.S. and its allies on one side and China on the other, Chinese port investments are attracting greater scrutiny.

The recent deal in Hamburg led to sharp divisions in the German government, with the foreign, economy and finance ministries and Germany's security services opposing it. Chancellor Olaf Scholz, formerly a mayor of Hamburg, ultimately pushed it through in modified form: Instead of the initially planned 35% stake, Cosco was allowed to purchase 24.9%, which would deny it any influence in decision-making.

China made nearly all of the world's supply of shipping containers last year. PHOTO: CHINA DAILY/REUTERS

Despite the compromise, the ministers who objected to the deal issued a critical statement that said the acquisition would "expand the strategic influence of China on German and European transport infrastructure as well as Germany's dependence on China."

A spokesman for China's Foreign Ministry in a news briefing characterized opposition to the deal as "groundless hype."

The Trump administration blocked Cosco from gaining control of a container terminal at Long Beach, Calif. Last year, Indian authorities didn't approve a deal that would have given China Merchants a stake in a terminal at the port of Mundra. Australia has said it would review the 2015 grant of a 99-year lease to the local unit of a Chinese company to operate the commercial port in Darwin.

China, under President Xi Jinping, has embarked on a decadeslong push to create a world-class navy able to protect the country's interests around the world. It is making more warships for long-distance missions and training crews. Its dozens of antipiracy patrols since 2008 have provided experience and led to the opening in 2017 of China’s first overseas military base, in the East African nation of Djibouti.

To operate far from home, global navies rely on complex logistical arrangements that can include using dedicated military bases and naval facilities of friendly countries as well as commercial ports. It is a system of what U.S. military officials call “bases and places.”

Security experts worry that Chinese-run ports might also be used for logistics support and intelligence gathering by China’s navy. PHOTO: AGENCE FRANCE-PRESSE/GETTY IMAGES

“When you’re far from home, you want a place to repair if something breaks, you want a place where you can ship parts to, you want a place to get water, food, fuel and everything else it takes to sustain, you want a place to rearm—that is hugely significant,” said Kevin Donegan, who led the U.S. Navy’s Fifth Fleet from 2015 to 2017 and is now a distinguished senior fellow on national security at the Middle East Institute, in Washington, D.C.

“It is what we built in our navy over the last 250 years. They are slowly building that up,” he said.

Chinese-run port terminals have commercial value, but are also “tri-use,” said Mr. Donegan, meaning they can be used not only for logistics support but also intelligence gathering and as future potential basing options.

Years before China established its military base in Djibouti, China Merchants entered the country with large investments and began developing a new commercial facility, the Doraleh Multi-Purpose Port, enhancing Beijing’s clout there. That facility is located next to what later became China’s first foreign base.

China's Cosco was able to buy a 24.9% stake in a port of Hamburg terminal only after a compromise among German officials. PHOTO: MICHAEL PROBST/ASSOCIATED PRESS

China's military, known as the People's Liberation Army or PLA, has a ready resupply point in places where a Chinese firm is present, giving it greater confidence to operate abroad, said Mr. Kardon. For China's navy, he said, getting the right ship part or supplies to the right place at scale can be a "complex muscle movement," but for shipping firms and port firms, it isn't.

While the PLA navy also uses port terminals run by non-Chinese operators, it is easier to coordinate with Chinese firms, many of whom are part of the same state apparatus, Mr. Kardon said.

China is looking to add more military bases abroad. U.S. officials say China has a secret deal for its armed forces to use a Cambodian naval base, though Cambodia's government denies this. China has accused the U.S. of maliciously speculating and smearing Cambodia.

The U.S. has also said Beijing is seeking a base on the Atlantic coast of Africa.

Washington is trying to block China's base-hunting efforts, which already face hurdles. Unlike the U.S., China doesn't have security allies across Europe, the Middle East and Asia.

Beijing appears to be seeking smaller and more-flexible options that can be networked together for military use when needed, a former senior U.S. defense official who tracks Chinese military strategies said.

"In that light, commercial ports serve as a strategic entry point," said the former official, who was closely involved in a Trump administration campaign to identify Chinese activities that can affect U.S. security interests.

“There are many cases where China’s port activity looks benign but in fact could turn with ease into something that facilitates China militarily.”

—Bojan Pancevski contributed to this article.

Write to Niharika Mandhana at niharika.mandhana@wsj.com

EXHIBIT 79

the japan times
THE INDEPENDENT VOICE IN ASIA

COMMENTARY / WORLD

China's port investments and risks to national security

Beijing's global control of shipping facilities is another means of power projection

China's COSCO Shipping Ports is the world's largest shipping company and port terminal operator. | REUTERS

BY BRAD GLOSSERMAN
CONTRIBUTING WRITER

Sep 26, 2023

Independent Polish media report that a U.S. ship that was supposed to pick up military equipment was refused access to the Polish port of Gdynia last month.

Allegedly — I haven't been able to confirm the story in other media or elsewhere — the ship later agreed to pay a "prohibitive" fee to Hutchinson Port Holdings, a Chinese company that manages the facility, and was then allowed to dock.

If true, this is the first evidence of a problem long anticipated: Aggressive efforts by Beijing to build and develop infrastructure in foreign countries that allows the companies operating those facilities to advance Chinese government interests rather than those of the host nations. While considerable attention has focused on the dangers associated with a Chinese role in national telecommunications grids, equally worrisome is a presence in conventional infrastructure, such as transportation hubs like ports.

For over two decades, China has made a concerted effort to send its commercial enterprises out of the country, to invest in foreign markets generally and infrastructure more specifically; this is the core of the Belt and Road Initiative. Ports have attracted particular interest. At the beginning of this year, Isaac Kardon, an expert at the U.S. Naval War College, counted 96 ocean ports owned and/or operated by PRC firms in foreign jurisdictions; at 29 of these ports, China is the sole operator. Chinese firms are directly involved in operations at 83% of the 96 ports. Thirty-six of the 96 are among the world's top 100 measured by container throughput. Throw in another 25 that are on the Chinese mainland and there is "a PRC nexus" for 61% of the world's leading container ports.

Chinese companies have investments in 31 container seaport terminals in Europe and the Mediterranean as of the end of August, from Greece and Malta in the south to Germany and Sweden in the north. They include some of the continent's biggest and most active ports, such as Rotterdam, Hamburg and Valencia.

Chinese companies have full or large majority control in only two: Piraeus in Greece and Zeebrugge in Belgium.

(For comparison, a 2022 analysis by Sinolytics, a European consulting company, identified 34 port terminals in China with one or more foreign investors. Only four, however, had more than 50% of the terminal operator, leading the Sinolytics team to conclude that there is "a de facto barrier to acquire larger shares for foreign investors and may hint at some informal investment barriers.")

In almost all cases, three big Chinese companies — COSCO Shipping Ports (the world's largest shipping company and the largest port terminal operator), Hutchison Port Holdings (the world's second largest port terminal operator) and China Merchants Ports (CMP, the sixth largest port terminal operator globally) — manage the facilities.

These investments pose considerable risks to a host country's national security. A 2017 People's Republic of China law requires Chinese companies and overseas subsidiaries in the international transportation sector to provide supplies and support ships, aircraft, vehicles and personnel for the country's military operations; it draws no lines between domestic and foreign jurisdictions or private and state-owned enterprises. In other words, the Chinese government can intervene in their operations and tell them what to do.

Kardon and Wendy Leutert of the Indiana University Hamilton Lugar School of Global and International Studies identified in their study of Chinese port ownership "multiple organizational and legal mechanisms by which China may coordinate or coerce its firms to serve state directives." Fear of being exposed as a state proxy is no deterrent. The German Marshall Fund concluded in a

2021 analysis that "when there is a choice in Beijing between political control and the international credibility of some of China's leading firms, the decision is no longer even in doubt."

In the darkest and most feverish speculations, Chinese port managers would lock out a country's ally, as allegedly occurred (temporarily) in Gdynia. That seems unlikely as it is awfully blatant and other stakeholders could provide berths. (Still, it only has to happen once in a crisis to have the desired effect — if the stakes are high enough, it could be a Rubicon worth crossing.)

Another ugly possibility is hiding missiles in shipping containers, which can be launched from a cargo ship, port, truck or train. Russia's Rosoboronexport markets the "Klub-K missile," which packs four ground- or sea-launched cruise missiles into a standard 40-foot shipping container. According to its website, they can be hidden among the thousands stored in a port — waiting to be used in a crisis.

More likely is the use of port oversight and control to collect intelligence. Even though ports are usually divided into civilian and military sectors, they often neighbor each other, providing ample opportunities to put eyes on activities in adjacent facilities, noting not only shipments but construction and other activities.

Military shipyards in Gdynia are building Poland's newest missile frigates and other facilities host a naval special operations unit that trains in the area as well as a transshipment terminal supplying strategic fuels to local warehouses. Kardon and Leutert argue that "the PLA (People's Liberation Army) almost certainly collects intelligence and conducts surveillance from overseas commercial ports."

Once again, perhaps the most important feature is the access to all the data and information generated as part of a port's daily operation. Those ships, cranes, containers and trucks are pieces of a huge network that monitors by the minute global trade.

Take that information from dozens of ports across the globe, as COSCO, the world's largest port operator can, and you have penetrating insight into what is being shipped, when and to whom. Kardon and Leutert call this "a distinctive kind of centrality" across the key maritime shipping routes.

China has also created the LOGINK — officially, the National Transportation and Logistics Public Information Platform — system as a one-stop shop for logistics data management, shipment tracking and information exchange among businesses and from business to government. Subsidized by China's ministry of transport and offered free to all participants in the supply chain, the cloud-based software platform is growing in popularity. As of a year ago, 24 international ports had signed agreements to use LOGINK, a list that includes Tokyo/Yokohama, Kawasaki, Osaka, Kobe and Niigata.

Combine that information with control of those facilities and there is the power to delay, degrade or disrupt trade in ways that can frustrate or pressure governments and influence geopolitical conflicts. Gdynia isn't on the front lines of the Ukraine invasion but it plays a crucial role in transporting military and civilian equipment to that beleaguered country. Rerouting equipment is possible but it takes time and many alternative ports are also run by Chinese entities. If publicity is an issue, problems can always be the product of a buggy software update rather than an overt act.

Longer-term, there is fear that these investments could shape the development of port infrastructure and connections to domestic transport networks in ways that benefit China. NATO's Strategic Concept, published in 2022, noted that China "seeks to control critical infrastructure" and that "it uses its economic leverage to create strategic dependencies and enhance its influence."

Finally, those investments yield political influence in recipient governments. China's stake in Piraeus allegedly encouraged the Greek government to soften its stand on port sanctions against ships supplying Russia. And, writes Kardon in an analysis of Chinese port investment in Africa, these deals are "the beachhead for wider Chinese engagement in Africa, providing a politically visible and commercially practical point of further access for PRC firms and official actors."

China has long insisted that overseas military bases are examples of imperialism and hegemonism, a position that makes a virtue of its lack of such facilities (although Beijing opened its first overseas base in Djibouti in 2017). Kardon and Leuter argue that the use of China's commercial port network to collect intelligence and support military logistics when its navy travels abroad provide many of the benefits of power projection cheaply and without the "geopolitical consequences that dedicated overseas bases would trigger."

This presence has accelerated implementation of investment review mechanisms in Europe. National security reviews will come to nothing, however, if political authorities decide that good relations with China prevail over other considerations, as the German chancellor concluded this spring after reviewing COSCO's planned purchase of a minority share in the port of Hamburg. Recent events in Gdynia might be grounds for a reassessment.

Brad Glosserman is deputy director of and visiting professor at the Center for Rule-Making Strategies at Tama University as well as senior adviser (nonresident) at Pacific Forum. He is the author of “Peak Japan: The End of Great Ambitions” (Georgetown University Press, 2019).

KEYWORDS

CHINA(HTTPS://WWW.JAPANTIMES.CO.JP/TAG/CHINA), U.S. (HTTPS://WWW.JAPANTIMES.CO.JP/TAG/US), TRADING (HTTPS://WWW.JAPANTIMES.CO.JP/TAG/TRADING), SHIPPING (HTTPS://WWW.JAPANTIMES.CO.JP/TAG/SHIPPING), GLOBAL ECONOMY (HTTPS://WWW.JAPANTIMES.CO.JP/TAG/GLOBAL-ECONOMY), DEFENSE(HTTPS://WWW.JAPANTIMES.CO.JP/TAG/DEFENSE)

EXHIBIT 80

The New York Times | https://www.nytimes.com/2017/06/19/world/europe/china-human-rights-greece-united-nations.html

In Greece, China Finds an Ally Against Human Rights Criticism

By Nick Cumming-Bruce and Somini Sengupta

June 19, 2017

GENEVA — China has long won diplomatic allies in the world's poor countries by helping them build expensive roads and ports. Now, it appears to have similarly won over a needy country in Europe.

At a meeting of the United Nations Human Rights Council this month in Geneva, the European Union sought to draw renewed attention to human rights abuses in China — only to be blocked by one of its member countries, Greece. A spokesman for the Greek Foreign Ministry in Athens called it "unproductive criticism."

It was the first time that the European Union did not make a statement in the Human Rights Council regarding rights violations in specific countries, including China, which has a seat on the council. That silence was an embarrassing reversal for the 28-country bloc, which has prided itself on taking progressive positions on human rights on a council where some nations with poor human rights records habitually resist country-specific resolutions and examinations of their conduct.

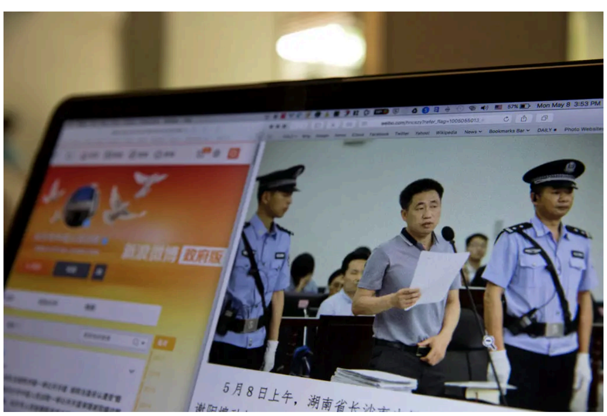
Greece is increasingly courting Chinese trade and investment as it faces pressure from international creditors and a cold shoulder from its traditional rich allies in Europe. China's largest shipping company, known as China COSCO Shipping, bought a majority stake last year in the Greek port of Piraeus. The Greek prime minister, Alexis Tsipras, has visited China twice in two years. And China will be the "country of honor" at Greece's annual international business fair in September in the port of Thessaloniki.

Greek ports are critical to China's "One Belt, One Road" initiative, a huge infrastructure project across Asia, Africa and Europe. Just last week, at a concert of the Shanghai Chinese Orchestra in Piraeus, the Chinese ambassador to Greece hailed the cooperation between the two countries. "Greece and China will remain good friends in good and bad times, good partners for mutual progress," said the envoy, Zou Xiaoli, according to Xinhua, the Chinese news agency.

China is seeking to expand its diplomatic influence worldwide, projecting itself as the chief proponent of international trade and cooperation as President Trump stakes out an increasingly nationalist position for the United States. In the past month, the Chinese premier has made high-profile visits to Brussels, the European Union's headquarters, and Berlin, the German capital.

After Mr. Trump pulled out of the Paris climate accord this month, the European Union said it would work with China, the world's largest polluter, to achieve the accord's chief target: keeping global warming to "well below" 2 degrees Celsius. China could well take advantage of the European Union's silence in Geneva.

In the last Human Rights Council session in March, the European Union statement pointed to China's detention of lawyers and human rights defenders. The statement also criticized Russia for its crackdown on civil liberties and the Philippines for its targeted drug-related killings.



The trial of Xie Yang, a human rights lawyer, was streamed online last month by the Changsha Intermediate People's Court.
Ng Han Guan/Associated Press

At the current Human Rights Council session, which ends this week, the European Union made no such statement on China because of Greek objections, European Union diplomats said.

“When the stability of a country is at stake, we need to be more constructive in the way we express our criticism,” a spokesman for the Greek Foreign Ministry said in a telephone interview, “because if the country collapses, there will be no human rights to protect.”

The spokesman, who requested anonymity because of diplomatic protocol in the country, added that Greece had adopted a similar stance with other nations, including Egypt, and that it was better to raise human rights issues in private meetings between diplomats from Brussels and Beijing.

It was an odd explanation, considering that China’s stability does not appear to be at risk. But in the face of the Greek objection, the European Union’s statement died on the vine.

“The global human rights agenda is best served when the E.U. speaks with one voice,” Maja Kocijancic, a spokeswoman for the European Union’s executive body, wrote Monday in an email.

“We will continue our work to bring all 28 together and hope it will, as we normally do, be possible to align positions” for the next session of the Human Rights Council later this year, she added.

Greece’s move to block the statement was first reported in The Guardian.

Human Rights Watch said it was “shameful that Greece sought to hold the E.U. hostage to prevent much-needed attention to China’s human rights crackdown.”

But it also said this was one of three occasions in the past three weeks when the bloc had “demonstrated no intention, compassion or strategic vision to stem the tide of human rights abuses in China.” It cited a summit meeting with the Chinese premier, Li Keqiang, at the start of June and the anniversary of the Tiananmen Square crackdown as other recent occasions on which Europe had failed to forcefully condemn human rights abuses in China.

Diplomats in Geneva noted that Greece was not alone in arguing against the European Union's statement to the council. Lengthy discussions in Brussels on the text of the statement failed to overcome Hungary's objection to mentioning human rights concerns in Egypt.

After a tense emergency meeting of European ambassadors in Geneva just two hours before the Human Rights Council debate, Hungary relented and withdrew its objection, leaving Greece as the sole obstacle to consensus.

A correction was made on June 20, 2017*: A picture caption with an earlier version of this article referred incorrectly to Xinjiang. It is an autonomous region of China, not a province.*

When we learn of a mistake, we acknowledge it with a correction. If you spot an error, please let us know at nytnews@nytimes.com. Learn more

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A version of this article appears in print on , Section A, Page 4 of the New York edition with the headline: In Greece, China Finds a New Ally Against Criticism of Its Human Rights Record