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AMITY INSIGHT

SHIPPING: PILOTING GLOBAL TRADE

PROFIT WITH PRINCIPLES

AMITY INSIGHT: SHIPPING

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> **Whosoever commands the sea, commands the trade; whosoever commands the trade of the world, commands the riches of the world, and consequently the world itself.**
>
> **SIR WALTER RALEIGH (c1552-1618)**

Raleigh, living in the age of buccaneers and private adventurers in Elizabethan and Jacobean times could not have imagined the phenomenon of modern container ships, and yet his far-sighted words capture something of the role shipping has come to play in the story of globalised trade.

Despite its omnipresence, modern shipping remains practically invisible, notwithstanding the vast bulk of our manufactured goods and raw materials relying on ships plying the oceans' invisible yet ancient trade routes.

Since earliest times, man has taken to the sea to trade and explore, with maritime exploration for commercial purposes among the oldest of human pursuits. The first known vessels date back over 10,000 years and are contemporary with the first wheeled vehicles.

The invention of the first ocean-going steam-powered vessels in the 1830s revolutionised trade, with steam harnessed to iron transforming the ability to transport goods globally and efficiently; only the volume of coal needed to power ships across the sea held capacity back.

This Amity Insight explores shipping from the perspective of its contribution to global trade (with a diversion to explore other no-less-important maritime areas such as the cruise line industry), the investment value chain from ports to vessels to brokers, and of course the many issues shipping raises for responsible investors. The story of modern shipping is also the story of the rise of China; from ports and vessel construction to seaborne trade itself, nowhere is the Chinese story more represented than in its embrace of shipping.

This Insight is the first of two to take a close look at the dynamics of transport – an indispensable part of the modern world. The second, on aviation, will appear in early 2016.

As always, we hope you enjoy reading this Amity Insight and look forward to any comments or feedback.

SHIPPING: CRUCIAL TO GLOBAL TRADE

Although we are rarely aware of them, ships are omnipresent with the world economy highly dependent on them. Shipping meets approximately 85-90%[1] of the global demand for transport, with more than 55,000 merchant ships, registered in 150 nations, carrying and transporting 8bn tonnes of cargo annually.[2]

The main trade routes by volume give expression to where our raw materials and finished goods come from, with the greatest volume of cargo shipped from Asia to North America (23,125,000 TEU*), Asia to Northern Europe (13,706,000 TEU) and Asia to Southern Europe (6,739,000 TEU).[3] Reverse trade, by comparison, is more modest and reflects a fundamental shift in the power balance away from the West, which was once the 'Workshop of the World'. Over 500 shipping services provide scheduled (weekly) services between ports, with routes from the Far East to North America plied most frequently (73 scheduled services per week).[4]

The modern shipping industry comprises many interwoven components – from shipping lines and owners, to ports management, brokers, marine insurers and support services. Seaborne trade and its component parts are highly cyclical – unsurprisingly during economic downturns the volume of maritime trade declines, as does the demand for ships.

Since 2008 for instance, parts of the market have been severely distressed as pressure on dry commodity prices, vessel oversupply, the impact of oil price falls, and the squeeze on oil and gas capital expenditure takes a toll. Excess tonnage and low freight rates have hurt conventional models for ship owners and shipping lines alike. However we remain convinced that Asia will continue to dominate growth in seaborne trade and new build; investment by China is being put into shipping infrastructure such as port expansion and larger vessel capacity.

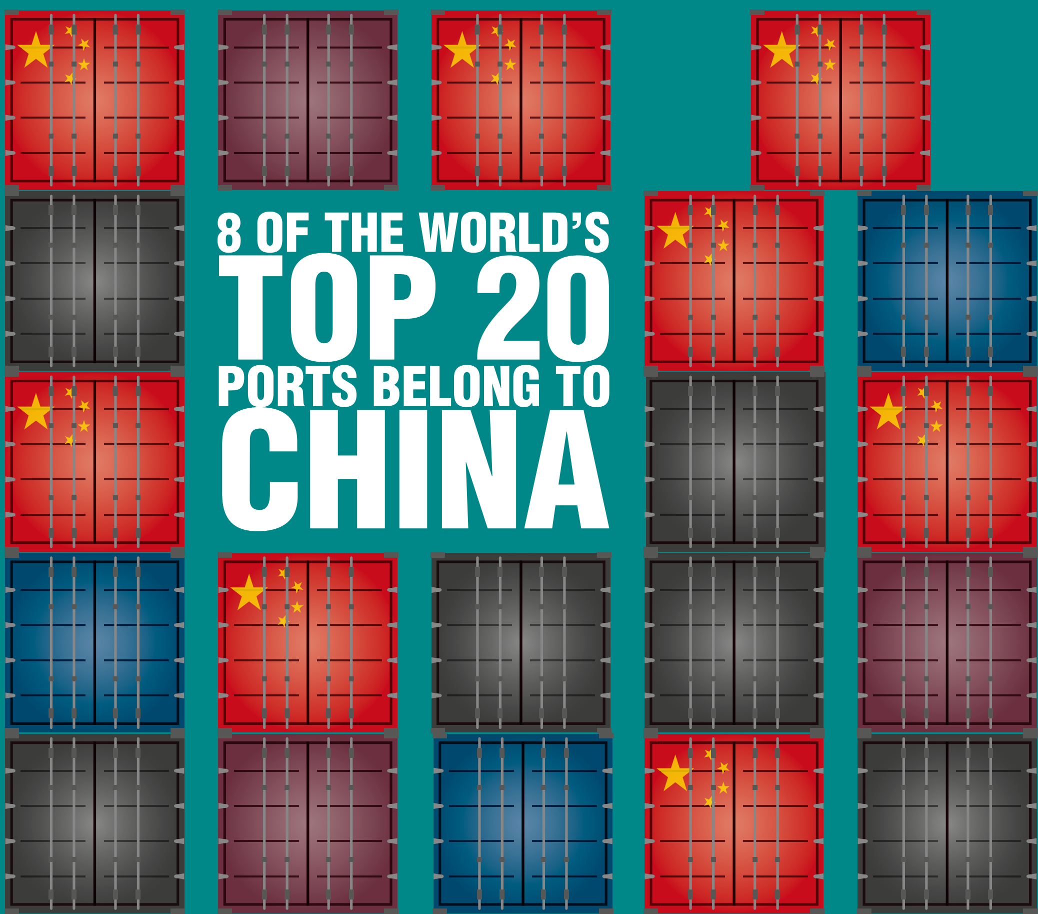
1. International Chamber of Shipping (ICS) www.ics-shipping.org **2.** ICS ibid. **3.** World Shipping Council (WSC) www.worldshipping.org **4.** WSC ibid.
*TEU is the internationally recognised standard size of a modern container (Twenty foot equivalent unit).

SHIPPING IS THE STORY OF CHINA

Shipping was once the story of Western manufacturing trading with the East. China's emergence as a global economic power is a defining maritime trend. Since 2000, China's annual container trade has grown by 30% and is now the largest container market in the world, with 1bn tonnes of seaborne cargo added in the decade 1998-2008. China alone represents 60%[1] of world growth in seaborne trade. Part of our investment interest in shipping comes from its interconnectedness with the rise of Asian economies in general, and China's in particular.

One little recognised result of this shift is that China accounts for over 25%[2] of all Panama Canal traffic and is the canal's second biggest customer after the USA. Chinese companies are behind the canal's expansion plans to widen it, so that a new class of container ships carrying 13,000+ containers can be accommodated through the canal.

China also accounts for the majority of newly commissioned tonnage; while Europe and the USA were once the centres for shipbuilding, this is now the preserve of Asia. 2014 saw a slump in new orders for ships owing to a glut following on from the global slowdown. Of the 39.7m CGT* commissioned in 2014, China secured the largest portion (38.5%), South Korea 29.7% and Japan 19.6%. The rest of the world combined accounted for only 12.2%[3] or less than 5m CGT. While demand for dry, wet and container ships has slumped, there is surging demand for LNG and LPG vessels, as more gas fields in the USA and Russia come on stream.



1. www.worldbank.org **2.** www.pancanal.com **3.** 'South Korean shipbuilders look to turn round in choppy waters' FT 24 February 2015. **4.** 'The Humble Hero' The Economist 18 May 2013. **5.** FT Big Read: US Ports FT 19 March 2015. **6.** Quoted in 'facts about shipping containers' www.billiebox.co.uk
*CGT Compensated gross tonnage or the loaded displacement of a vessel.

THE HUMBLE CONTAINER

The humble container can arguably be thought of as perhaps among the most important yet underrated inventions of the 20th century. While the earliest sealed containers date from the 18th century, the modern container provided the impetus for globalising trade following its patenting in 1956, after which it steadily replaced 'break bulk' cargo methods. The share of countries developing container ports increased exponentially from 1% in 1966 to 90% by 1983.[4] Containerisation encouraged standardised and automated cargo handling, more or less eliminating the need for longshoremen and thereby dramatically reducing port costs.

Containers also reduce theft in transit as they are sealed, reducing insurance and losses. In 1965, dock labour could move about 1.7 tonnes of non-standardised cargo per hour; by 1970, automation had increased this to 30 tonnes per hour of containerised cargo.[5]

There are an estimated 17m[6] intermodal containers in use worldwide, typically made in China from corrosion-resistant steel to a standard 8ft x 8.6ft x 20ft size. This has come to be known as the TEU (twenty-foot unit) by which cargo loads are measured. Ship size normally relates to container capacity with the world's largest container ship (MSC Oscar), for instance, having a TEU, of 19,224.

> "Although only a simple metal box, it has transformed global trade. In fact, new research suggests that the container has been more of a driver for globalisation than all trade agreements in the past 50 years taken together.
>
> **THE ECONOMIST**

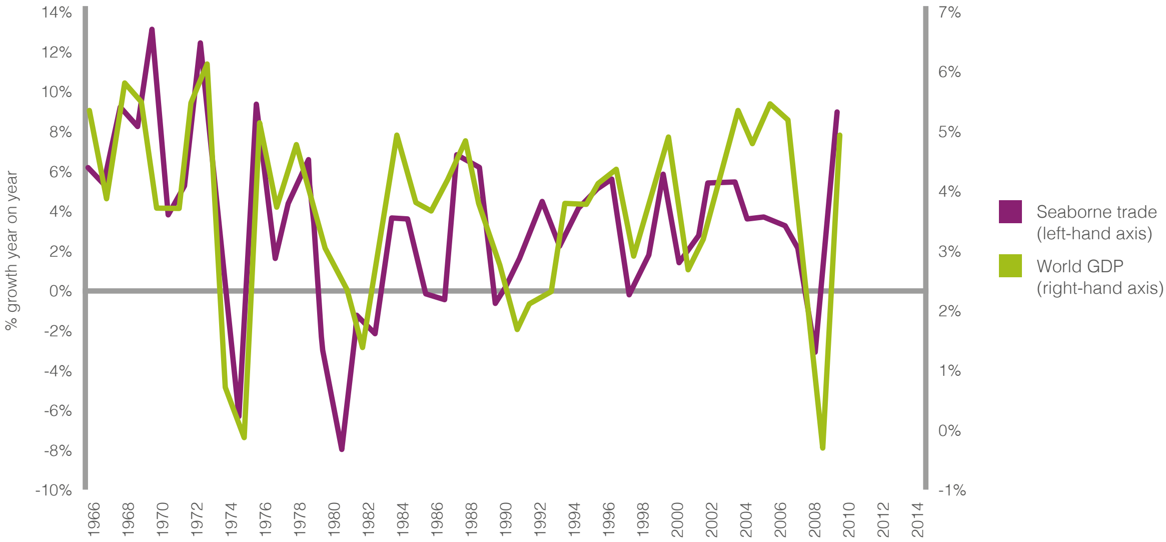
HOW MODERN SHIPPING WORKS

The shipping supply chain is complex and finely tuned: ship brokers act as specialist intermediaries between ship owners and charterers with London, Athens, Oslo and New York being the pre-eminent centres for global ship broking. However, London's Baltic Exchange is the market for the trading of shipping contracts and operates in both the dry bulk and tanker markets. International shipbrokers supply independent data on freight costs that make up the various indices used by international traders. For instance, the Baltic Dry Index (BDI) which commenced in 1985 (although its antecedents can be traced back to the 1820s), is an assessment of the price of moving raw materials by sea across 23 shipping routes. The index covers the main categories of vessel (HandySize, Supramax, Panamax etc) carrying a range of commodities such as coal, iron ore and grain.

The entire chain is very finely balanced to prevent 'crash and burn' eg small changes in fleet availability can have disproportionately adverse price impacts. Indirectly, the BDI is seen as a proxy for commodity price movements and as an efficient indicator of economic growth or contraction.

The index has suffered strong volatility since the financial crisis and recent oil price falls. Reaching a record high in 2008, it had fallen 94%[1] by December of the same year. Current subdued levels are due to a glut of dry bulk carriers, falling demand for commodities such as coal and iron ore, falling oil prices and tanker rates, and a slowing of China's economic prospects. 2008 saw an almost immediate surplus in vessels, depressed freight rates and lower volumes which have not completely recovered.

THERE IS A CLOSE RELATIONSHIP BETWEEN GDP GROWTH AND SEABORNE TRADE GROWTH



Source: ICS.

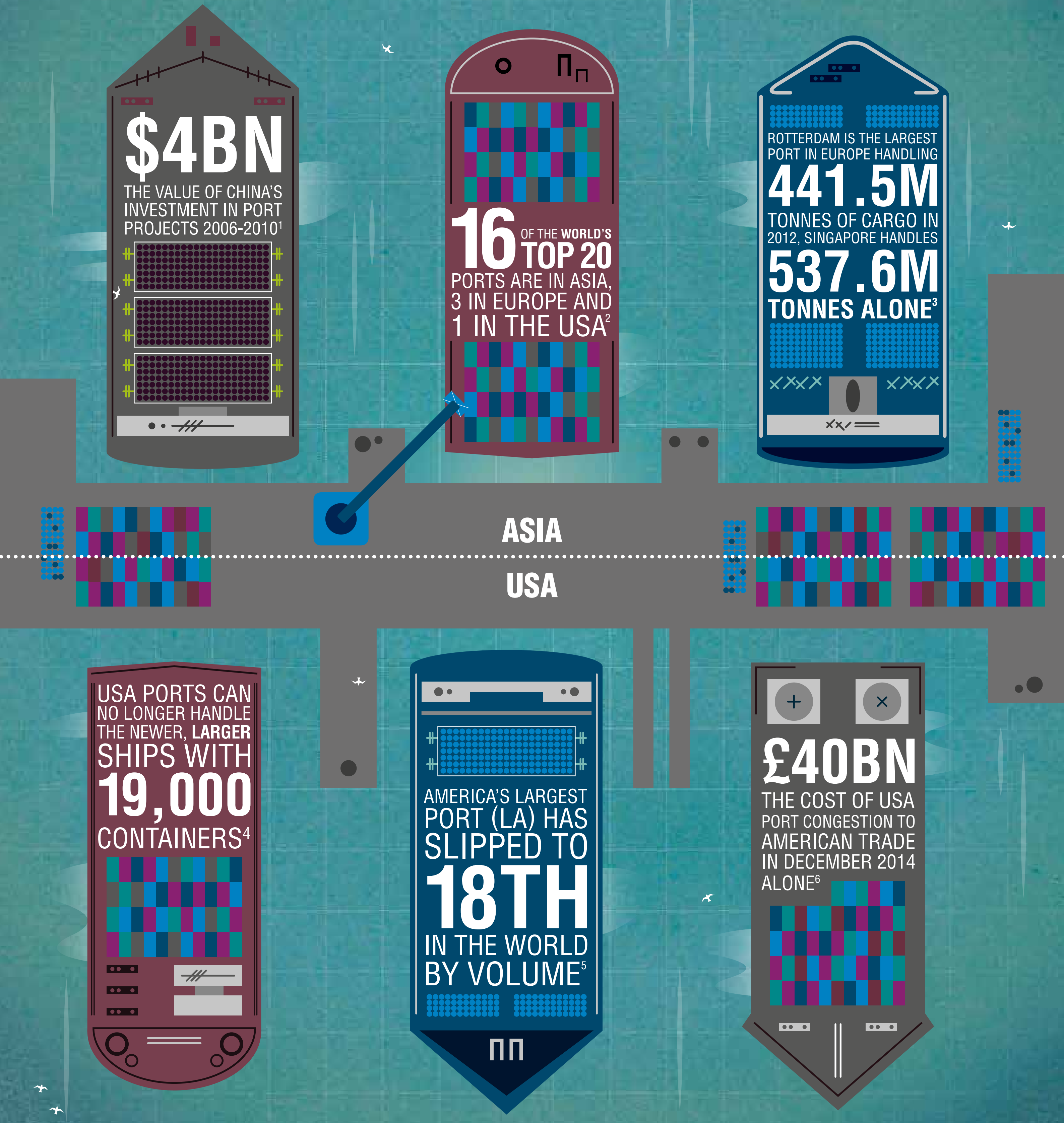
GROWTH IN THE WORLD FLEET AND TOTAL SEABORNE TRADE REMAIN UNCORRELATED

Source: ICS.

As well as being a centre for global broking and trade, London is of course, through Lloyd's of London, the pre-eminent marine insurance market, with its origins rooted in the late 17th-century insurance of slavers and slave ships. Today Lloyd's retains 33%[2] of global marine insurance (hull, cargo, general liability and specie risk), although alongside the shift in trade to the East, Singapore has emerged as a global contender in marine insurance.

1. www.economist.com. **2.** Quoted in 'The Competitive Position of the London Insurance Market (London Market Group) 2014 www.londonmarketgroup.co.uk

THE CHANGING SHAPE OF WORLD TRADE IS MIRRORED IN ITS PORTS



1. Quoted in 'Global Investment in Ports & Terminals' www.hfw.com **2.** WSC ibid. **3.** Ibid. **4.** FT 19 March 2015 ibid. **5.** WSC ibid. **6.** FT ibid.

THE ECONOMICS OF SHIPPING

The most common form of contract chartering is the 'Voyage Charter' whereby a ship is leased for a port-to-port journey. Vessels can also be hired on a 'Time Charter' basis, in which the owner places a crewed ship at a charterer's disposal for a given period. Freight is paid in advance and the charterer pays the bunker (fuel), port and canal costs.

There are two aspects to the chartering price: the chartering price is the price to charter a 1 TEU slot on a container ship; the freight price is the comprehensive daily cost to deliver 1 TEU of cargo on a given route. Route prices differ considerably, for instance Asia-North America is significantly higher than the reverse route. Payment is expressed in $US per tonne of cargo, with the owner bearing the cost of bunker, port and canal costs.

VESSELS & PORTS

There are three main categories of vessel: containers, dry bulk and tankers. The gas fleet represents a fourth and growing denomination of vessel type.

CONTAINER

Containers make up 13%[1] of the merchant fleet by tonnage and are the backbone of global trade with 60% of seaborne trade; valued at $5.6trn in 2010 moving 1.5bn tonnes of cargo by sea. The typical size of today's fleet has a 13,000-19,000 TEU capacity.

DRY BULK

The five core dry bulk carrier sectors are iron ore, coal, bauxite, alumina and food stocks which account for 50%[2] of all seaborne dry bulk. Outside of these, the market is highly diversified and includes 37 commodities. 2.5bn tonnes of iron ore alone were shipped in 2012. The typical size of today's bulk carrier is a capacity of 115,000-400,000 DWT (Dead Weight Tonnage).

TANKERS

Petroleum products across the three main markets (crude oil, clean and dirty oil) are the main tanker uses. The typical size of today's tanker fleet can be up to 300,000 DWT,[3] with ships up to 320m long. About 33% of all seaborne trade is in oil and gas.

LPG, LNG ammonia and petrochemical gas are the fastest-growing tanker segments. The typical size of today's specialist gas fleet is up to 200m long with a capacity of 60,000-100,000 M3 of gas[4] – representing the main area of commissioned new build.

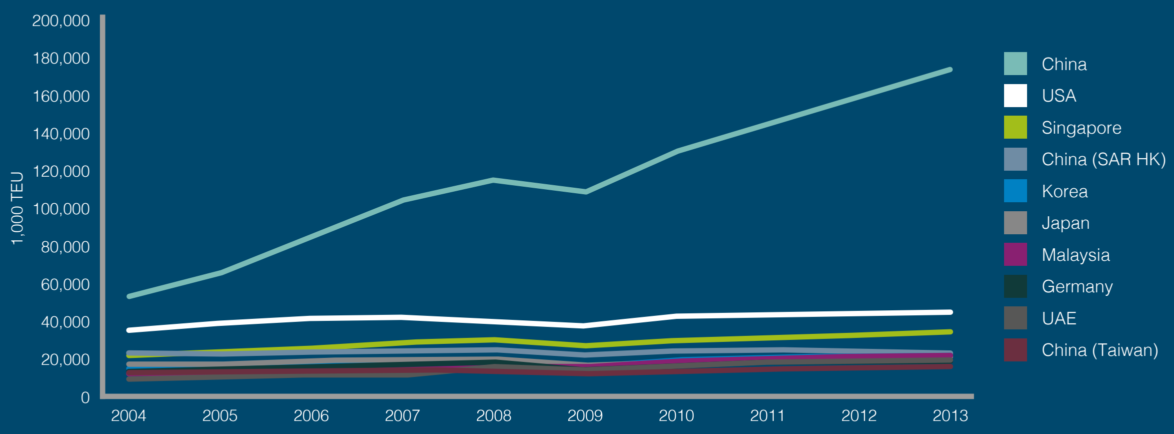
PORTS

As with shipbuilders and shippers, ports also tell the story of China's economic miracle as home to seven of the world's ten largest by volume.[5] Only one of the world's leading ports is not in Asia: Rotterdam in the Netherlands. The decline in US shipping volumes says much about the relative stagnation and decline of the USA's role in global shipping; once home to the largest and busiest ports in the world, Los Angeles (the largest port by volume in the USA) has slipped to 18th in the world league table by volume, below Hamburg and Antwerp. Failure to invest and a strong reliance on antiquated practices has seen volumes decline: US ports cannot routinely handle the largest container ships of 13,000 TEU, while a typical Asian port will move 50% more cargo per hour than its US equivalent.[6] The impact on US GDP is stark, with port congestion responsible for an estimated $40bn in lost trading volumes in December 2014 alone.[7]

By comparison, Shanghai, the world's largest port, handled 35.2m TEU in 2014, and comprises a geographic area of 3,619 km². The port comprises 125 berths and a quay length of over 20km. Singapore, the second largest port by volume, handles 33.9m TEU and receives 140,000 vessels per annum. By comparison, Los Angeles, the largest US port, handles just 7.8m TEU per annum.[8]

In the UK there are about 120 commercial ports, including container, ferry, specialist and local. The UK ports industry, in aggregate, is the largest in Europe, handling 560m tonnes of cargo a year. However, ports traffic is highly concentrated with the top 16 ports handling 80% of volume traffic. The UK remains a solidly maritime nation with 95% of all UK trade handled via seaborne means. Felixstowe (Hutchison Ports) is the largest UK port, handling 42% of all UK container traffic.[9]

COUNTRY GROWTH IN PORTS TRAFFIC 2004-2013[10]



Source: WSC

There has been strong infrastructure investment in ports globally, with about 195 ongoing projects worth $38bn.[10] The majority – $20bn – of this is in greenfield projects in Asia, Latin America and the Pacific Rim. Between 2006 and 2010 China invested $4bn in ports expansion, and investment is needed to accommodate ever larger vessels routinely carrying in excess of 19,000 containers. The major global ports groups include:

HUTCHISON PORT HOLDINGS HONG KONG	Part of Hutchison Whampoa, operating five of the seven busiest ports and 13% of trade by volume.
PSA INTERNATIONAL SINGAPORE	Part of Temasek Holdings (the Singapore Sovereign Wealth Fund) also owns Antwerp and Zeebrugge.
DP WORLD UAE DUBAI	Listed in London (20% free float) Emirates-based global ports group with 65 maritime terminals including Southampton and London Gateway.
APM TERMINALS NETHERLANDS	Part of Maersk Group listed in Denmark – conglomerate maritime and shipping business with a portfolio of 71 global terminals.

1-4. All figures www.clarksons.com **5.** WSC ibid. **6-7.** FT ibid. **8.** WSC ibid. **9.** www.portoffelixstowe.co.uk **10.** HFW ibid.

SHIPPING: OTHER SECTORS

FOCUS ON THE CRUISE & LEISURE INDUSTRY

Cruising is the fastest-growing category in the global leisure market, growing 7.2% per annum since 1980.[1] The global cruise industry is conservatively valued at $117bn, and employs nearly 1m people.[2] Demand has increased exponentially – 77% in a decade, from 12m to 23m passenger sailings. The sector enjoys positive demographics with an ageing, affluent population choosing cruising as their vacation of choice. 85% of global passengers are from just two jurisdictions: North America and Western Europe, making it an intensely concentrated industry.

Cruising also reflects the story of China, which is now the fastest growing cruise market in the world. From a low base of 217,000 passengers in 2012, volumes have grown by 79% annually since then and are expected to reach 1 million passengers in 2015. This potentially makes China the second largest passenger market for the cruise industry after the USA, sustaining confidence in more commissioned vessels that are ultimately to be home-ported in Shanghai rather than in the West.[3]

Given ever-increasing demand, the global order book is strong with 13 new vessels delivered in 2013 and 34 on order for delivery 2014-16, 22 of which are ocean-going. The average modern cruise ship will weigh more than 100,000 gross tonnes; for instance the Royal Princess (Carnival) launched in 2013 weighs 142,714 GT, is 1,083ft long and carries 4,100 passengers. Cruising is a vital economic value add, contributing an estimated $225,500[4] of activity at each port of call. The sector is fragmented, but highly investible. Carnival (USA-UK) with global brands including P&O and Cunard is the global number one, and Royal Caribbean Cruises the global number two.

"57 cruise ships now weigh more than 100,000 GT including 20 built since 2010: Royal Princess (Carnival) was launched in 2013 and weighs 142,714 GT and is 1,083ft long carrying 4,100 passengers[5]

This Amity Insight is principally concerned with the role shipping plays in global trade. Of course, ships are represented across other economic and industrial areas.

DEFENCE

Budgets controlled by nation states, normally contracted to private defence majors. Western defence budgets remain under strong pressure, with, for instance, the Royal Navy incurring deep cuts. The surface fleet is now reduced to 19 destroyers and frigates down from 60 in 1979.[6] The nature of conflict re-evaluated the need for large, sovereign navies, however, geo-political tension, piracy and humanitarian missions have proved the need for a continuing roving presence. Key global manufacturers include BAE Systems, Thales, General Dynamics & Huntington Ingalls Industries. **Largely excluded by EIM on strategic weapons grounds**.

FISHING

The world fishing fleet may number some 4m vessels with up to 80%[7] located in Asia. The European fishing fleet has contracted heavily owing to quotas, with the UK fleet declining by 25% since 1996,[8] although the combined UK fleet has the third largest catch by volume within Europe. At the end of 2013, UK-registered vessels numbered 6,399 – down from over 13,000 in the late 1940s.[9] The sector is not investable, and has high to critical sustainability impacts including overfishing, habitat destruction, net sizes and irresponsible trawling (‘by catch’), as well as endemic slave and bonded labour. **Largely un-investable**.

SERVICE & SUPPORT VESSELS

Highly fragmented specialist markets including search and rescue, offshore construction, cable laying, heavy lift, platform supply and lightships. European shipbuilding in this sector accounts for 20% of global capacity. There are 150 yards[10] in Europe alone with large sea-going capacity. Although affected by the decline in the oil price, relative diversification means parts of the sector remain buoyant throughout the cycle. **The sector is well represented in EIM funds**.

FERRIES

The global ferry industry transports 2.1bn passengers and 250m cars annually. There are about 1,300 ferries of over 1,000 gross tonnes,[11] and thousands of smaller ferries providing vital lifelines between island communities. The UK ferry industry supports 38m[12] passenger journeys annually, and they remain a primary source of transport in the developing world. Ferry safety is an issue with 47 accidents in 2014, 95% occurring in the developing world. Four countries (Bangladesh, Indonesia, the Philippines and China) were responsible for 50%[13] of all ferry accidents. Main operators include P&O (Dubai World), Condor (Macquarie) and DFDS. **Largely un-investable except as part of broader conglomerate maritime operations**.

1. www.cruising.org. **2.** Ibid. **3.** Jefferies ‘Cruise lines; slow boat to China’ research note 14 July 2015. **4.** Ibid. **5.** www.telegraph.co.uk **6.** www.royalnavy.mod.uk **7.** www.fao.org **8.** HM Government Sea Fisheries Statistics January 2015 researchbriefings.files.parliament.uk/documents/SN02788/SN02788.pdf **9.** HMG ibid. **10.** www.globalsecurity.org **11.** www.interferry.com **12.** www.discoverferries.com **13.** www.ferrysafety.org

ETHICAL ISSUES FOR RESPONSIBLE INVESTORS

As we have seen, shipping is a key component of global trade at the centre of a successful modern leisure sector. Providing a variety of supporting industry, military, transportation and service sector hubs across the world. However, shipping also presents several environmental and social impacts which are of interest to the ethical and responsible investor.

END-OF-LIFE SHIP BREAKING

The average life span of a ship is 30 years[1], with about 750 ocean-going ships decommissioned and scrapped annually; 1,119 vessels were scrapped in 2013 alone. 95% of a ship's mass is steel and 97%[2] is recyclable. Until the late 20th century ships were routinely broken up in home ports, for instance the UK had a substantial dismantling industry.

As we have noted elsewhere, dismantling is now also the story of Asia, with 85%[3] of ships broken up in just three countries: China, India and Bangladesh. The last raises particular concern as ships are typically 'beached' in the Chittagong and dismantled by hand with little regulation concerning health & safety or environmental protection. Whereas in 2008 Bangladesh was the world's largest dismantler of ships, by 2014 this had fallen to 20%[4] of the global total as concerns hardened over safety and toxicity. Given a single ship may have 8,000 kg of asbestos and tonnes of lead paint, these issues have become fundamental for ship owners and their investors.

The International Maritime Organization (IMO) has responded with the Convention for Safe and Environmentally Sound Recycling of Ships, which attempts to ensure 'green' breakage and recycling with no risk to human health. Each vessel is now required to have an inventory of hazardous substances, and responsible owners, such as Maersk, have committed to ending 'beaching' as an end-of-life route.

SAFETY

Shipping as an industry remains safe; however 94[5] large ships were lost in 2013. The majority of safety incidents were located in China and South Asia (35) with cargo accounting for a third of losses (32) and bulk carriers a further 12. Over 2,000[6] casualties were recorded in shipping accidents.

Liquefaction (concentration of moisture in bulk transport), container handling, passenger safety and machinery accidents account for the main types of risk at sea. Ferry safety, as we have seen, remains a key challenge in some parts of the world.

CLIMATE CHANGE

Shipping is the only sector without a cap on emissions at EU level, placing all responsibility on the sector to improve efficiency. Shipping accounts for about 3%[7] of global GHG emissions or 400m tonnes a year. In the period 2005 to 2015 the IMO projects this increasing by a range of 50-250%.[8] Since 1990, shipping emissions have increased by 90%; under a 'business as usual' scenario, shipping could account for 10% of global emissions by 2050.[9] The IMO response has seen the Energy Efficiency Design Index (EEDI) being introduced in 2011, the first globally binding climate change standard for the industry. This requires newly commissioned ships to become more energy-efficient, with ships built after 2013 having a 10% improved efficiency and 30% for ships delivered after 2024. By 2030 EEDI may have led to a global reduction in shipping emissions of 10-20% against BAU (Business as usual) projections.

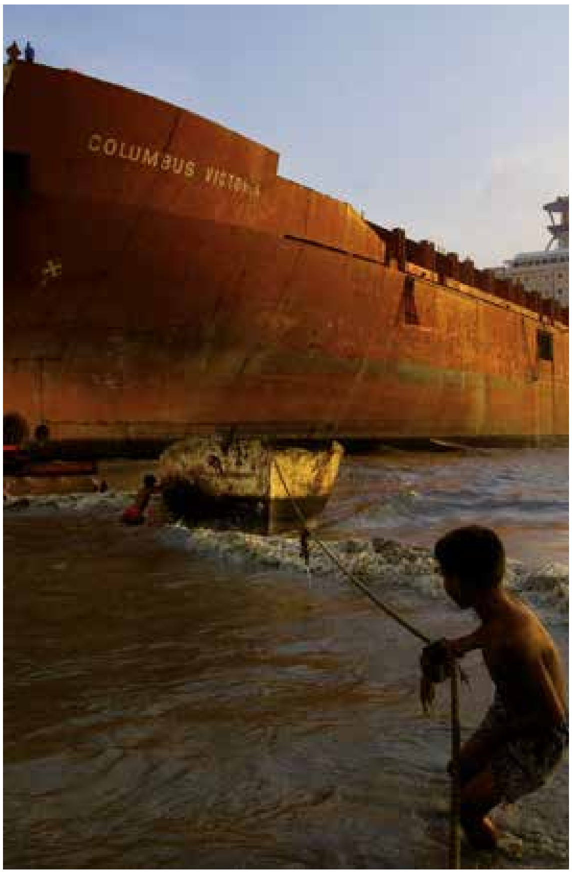
Other design improvements include modifying hull, propeller and propulsion systems and 'slow steaming' (pioneered by Maersk). With 70% of fuel cost being borne by the charterer, they may begin positively to select more fuel-efficient vessels where emissions savings can be as much as 1,397 tonnes of carbon saved on an 11,000-mile sailing. Reducing a ship's speed ('slow steaming') by 10% can reduce emissions by 27% and does not require technology or retrofitting.[10]

Black carbon, a material risk for the sector, is a pollutant associated with poor combustion, and has a double climate change impact. Quantifying its impact is inexact, but is widely thought to be about 5%[11] of global sulphur oxides. Older vessels using low-quality high-sulphur fuels are a key risk. The IMO is beginning to regulate black carbon by phasing out low-grade fuels and via the introduction of low Emission Control Areas (ECA) such as in the Baltics. The EU may also bring in port controls designed to exclude dirtier, more polluting vessels.

HUMAN RIGHTS & PIRACY

Shipping companies have become increasingly involved in 'migrant risk', with 170,000 migrants fleeing theatres of conflict such as Syria, Libya and Eritrea. Several thousand migrant deaths have occurred in the waters of the Mediterranean, with 600 merchant ships involved in rescues during 2014.[12] As Maritime Law obliges ships to respond, this has become a present and increasing danger. The International Chamber of Shipping has issued new guidance centred on 'sanitation, hygiene and safety', in which the 'obligation of always rescuing people' is balanced with the 'sheer numbers' affected.

Piracy too has become a significant human rights risk, particularly for charterers navigating the Horn of Africa; in 2011 there were 439 pirate attacks, and 45 hijackings of merchant ships. While container ships are generally safer, they are not immune from attacks. Liners have been consistently targeted, with 65 liners attacked in 2011.[13] Pirates from Somalia are now operating over extensive distances, including as far as the Indian coast (1,500 nautical miles). Solutions are challenging and have been met by international naval patrols and wider convoy protection.



LABOUR & EMPLOYMENT

Shipping is a major source of employment but standards can be poor. A 2010 study put the total seafarer complement at 624,000 officers and 747,000 ratings.[14] The cruise industry has been dogged by persistent allegations of 'sweatshop' conditions. While 85% of passengers come from the USA or Western Europe, a typical ship complement is drawn from 60 nationalities on six to ten-month contracts.[15] Labour issues typically include:

- Insecure contract terms
- Low wages and high costs including agents' fees paid to get the job (typically $500-$1,500); wages have been as low as $50 per month plus tips
- Repayment of agency fees has meant labour may be indentured for the first seven months of employment
- Long working hours poorly regulated; these vary but can be up to 17-20 hours in some regions with no time off
- Practices that can include bullying, ill treatment, harassment and gender discrimination or abuse
- Little union or collective bargaining representation
- Inability to leave ship as passports routinely 'surrendered'

The IMO has responded with a single comprehensive rights and protection formula for seafarers globally, which sets out minimum requirements for working conditions including employment terms, accommodation, time off, leisure, health and welfare.

Other parts of the maritime industry have been dogged by allegations of slave and bonded labour, such as the Thai fishing industry supplying fish meal to prawn farmers, who in turn supply major retailers such as Tesco.

1. International Maritime Organization (IMO) www.imo.org **2.** www.shipbreakingbd.info/Shipbreaking%20around%20the%20world.html **3.** www.shipbreakingbd.info ibid **4.** Ibid. **5.** Safety & Shipping Review 2014 Allianz www.agcs.allianz.com/assets/PDFs/Reports/Shipping-Review-2014.pdf **6.** Allianz ibid. **7.** IMO ibid. **8.** IMO ibid. **9.** IMO ibid. **10.** Maersk www.maersk.com **11.** Quoted in 'Black Carbon' www.socialinvesting.com **12.** 'Shipping groups warn of migrant rescue risks' FT 19 January 2015. **13.** International Chamber of Commerce (ICC) icc-ccs.org/news/711-piracy-attacks-in-east-and-west-africa-dominate-world-report **14.** Manpower 2010 Update: The Worldwide Demand For and Supply of Seafarers (BIMCO/ISF www.bimco.org **15.** www.carnival.com

THE INVESTMENT VALUE CHAIN

While some areas of shipping are not investable, and others are largely excluded from investment on ethical grounds, the sector remains a diverse and vibrant arena in which to seek investment returns.

From ports to shipping lines, to shipbuilders and suppliers of support vessels to finance and broking, there is a breadth and depth often not encountered in other sectors.

Below we consider some of the potential areas and companies open to investment, and we focus on three: **Maersk, Software Radio Technology** and **Clarkson.**

MAERSK

INTEGRATED SHIPPING: MAERSK GROUP

Any discussion of shipping cannot avoid Maersk Group, the world's largest listed integrated shipping group. Listed in Denmark, Maersk encompasses a shipping line of over 600 vessels, APM Terminals (the third largest integrated ports group), Maersk Oil (oil exploration), Maersk Drilling (a support fleet for the oil and gas industry) and APM Shipping Services (freight management). The company had revenues of $47.6bn in 2014, with all segments reporting improved performance. Despite recent volatility, over the long term the company has performed well and has a progressive dividend policy. The company carries significant ESG risk, but is rated strongly for its overall performance, particularly in environmental management.

The company has a target to reduce carbon emissions by 60% by 2020 per container moved, and will save over 200MT of carbon with over half already achieved. The company's aim is to 'decouple' growth from emissions, and part of the way it achieves this is by sailing larger volume ships at slower speeds. Major risks other than climate change include spills, H&S, conflict risk and ship decommissioning.

Software Radio Technology

NICHE TECHNOLOGY: SOFTWARE RADIO TECHNOLOGY

SRT is a global leader in automatic identification systems (AIS) based maritime safety. Its target market is 26m vessels, buoys and ports worldwide. In 2002 the IMO made AIS the global tracking standard for ocean-going ships and it is the default tracking system for vessels over 300 GT. The company is AIM listed with a market cap of £42.5m and a gross margin of 49.2%. The shares have performed well over a five-year period.

BROKING: CLARKSON

Clarkson is the world's leading provider of integrated shipping services, with global reach into dry, wet and bulk cargo, LPG, LNG and other chartering. The company also trades ships (new-build, second-hand) and arranges scrappage. It is a global leader in shipping research and analytics as well as vessel agency, port logistics, chartering and warehousing. The company covers 20,000 operators and 600 shipyards. Listed in London, it has a market cap of £669.5m with revenues of £237.9m in 2014. The company has a strong balance sheet and 12 years of dividend increases. The company screens positively under the Amity responsible investment criteria.

PORTS/BUILDERS

HPH

DP WORLD

Camper & Nicholsons
YACHTING SINCE 1782
MARINAS

HYUNDAI
HEAVY INDUSTRIES CO.,LTD.

SAMSUNG
SAMSUNG HEAVY INDUSTRIES

DSME

SHIPPING LINES

Hapag-Lloyd

MAERSK

NYK LINE
NIPPON YUSEN KAISHA

HANJIN SHIPPING

SUPPORT VESSELS

FUGRO

subsea 7

OSG

Fisher

TEEKAY CORPORATION

Ocean Wilsons
Holdings Limited

BROKERS

C

BRAEMAR

ICAP

HUNTING

CRUISE LINES

CARNIVAL
CORPORATION & PLC

Royal Caribbean
INTERNATIONAL

GENTING
HONG KONG

Disney Cruise Line

TECHNOLOGY

AkzoNobel

Software
Radio Technology

VIEW FROM THE TOP

In this Insight, we have sought to highlight how shipping not only lies at the very heart of global trade, with up to 90% of cargo by volume traded by sea, but also provides investors with an impressively wide and deep investment value chain. This comprises shipbuilders, ports management, logistics companies, shipping lines, brokers and support vessel companies – a breadth few other sectors and industries can emulate.

As a house with a long-term investment philosophy and a bias towards Asia, shipping represents an interesting proxy to us. Modern shipping is in effect the story of the rise of Asia, especially China, and the relative decline of the USA. The main trade routes by volume give expression to this transition: the greatest volume of cargo is shipped from Asia to the USA and Western Europe; the least from North America to Asia. China has taken a leading role in the commissioning of new tonnage and also in the expansion of the Panama Canal, where it accounts for 25% of all traffic. The role of the humble container has been pivotal in transforming global trade via the standardisation and automation of cargo handling; this has enabled China, through heavy investment in technology and infrastructure, to host seven out of ten of the largest seaports in the world by volume.

The long-term investment case is therefore clear: shipping is a play on global commerce; it will remain at the epicentre of human economic activity in several guises; container, dry bulk, tankers and the specialist LNG/LPG gas fleet. However, shipping raises several material risks for responsible investors and this Insight draws attention to them.

Some of these are deeply complex such as piracy and trafficking, others such as climate change and pollution are now being addressed by the IMO (International Maritime Organisation) via technology and alternative fuel mixes. The issues of end-of-life ship breaking, labour & employment and safety will also have to be addressed to ensure the industry can continue to deliver long-term sustainable returns.

As a house, some areas of the sector are not investable on ethical grounds (defence) and others, despite the size of the fleet, have little or no investment scale (fishing and ferries). Other specialist areas such as cruising remain vibrant and growing. We remain positive on the wider opportunities the shipping value chain presents. It plays well to our long-term investment themes and to our strong bias towards Asia. At every point shipping is represented by quality engineering, financial services and support-service companies where value can be found. The ethical issues are not simple, but overall we believe shipping is one to watch and is well piloted for investment opportunities.

Ketan Patel
Associate Fund Manager

WHY EDENTREE?

- Over 25 years of experience of socially responsible investing (SRI)
- Funds that are both positively and negatively screened
- An investment team with a wealth of experience spanning many years
- A comprehensive in-house SRI research function
- An independent panel that reviews investment decisions
- A robust socially responsible investment process
- A pride in our independent analysis. We're not afraid to adopt contrarian positions and are in favour of long-term investment horizons
- A consideration of the preservation of capital as our primary responsibility, preferring absolute returns over relative performance
- Fund Managers at EdenTree are unconstrained by rigid stock lists, permitting more flexibility to take advantage of good-value opportunities as they present themselves
- Decision-making for the long term, as frequent trading increases costs and decreases returns
- Avoidance of companies materially involved in alcohol production, gambling operations, pornographic and violent material, tobacco production, testing animals for cosmetic or household products, supporting oppressive regimes or strategic weapon production
- Actively seeking out companies with a record of involvement and good performance in terms of business practices, community relations, corporate governance, education, environmental management, healthcare, human rights, labour relations and urban regeneration

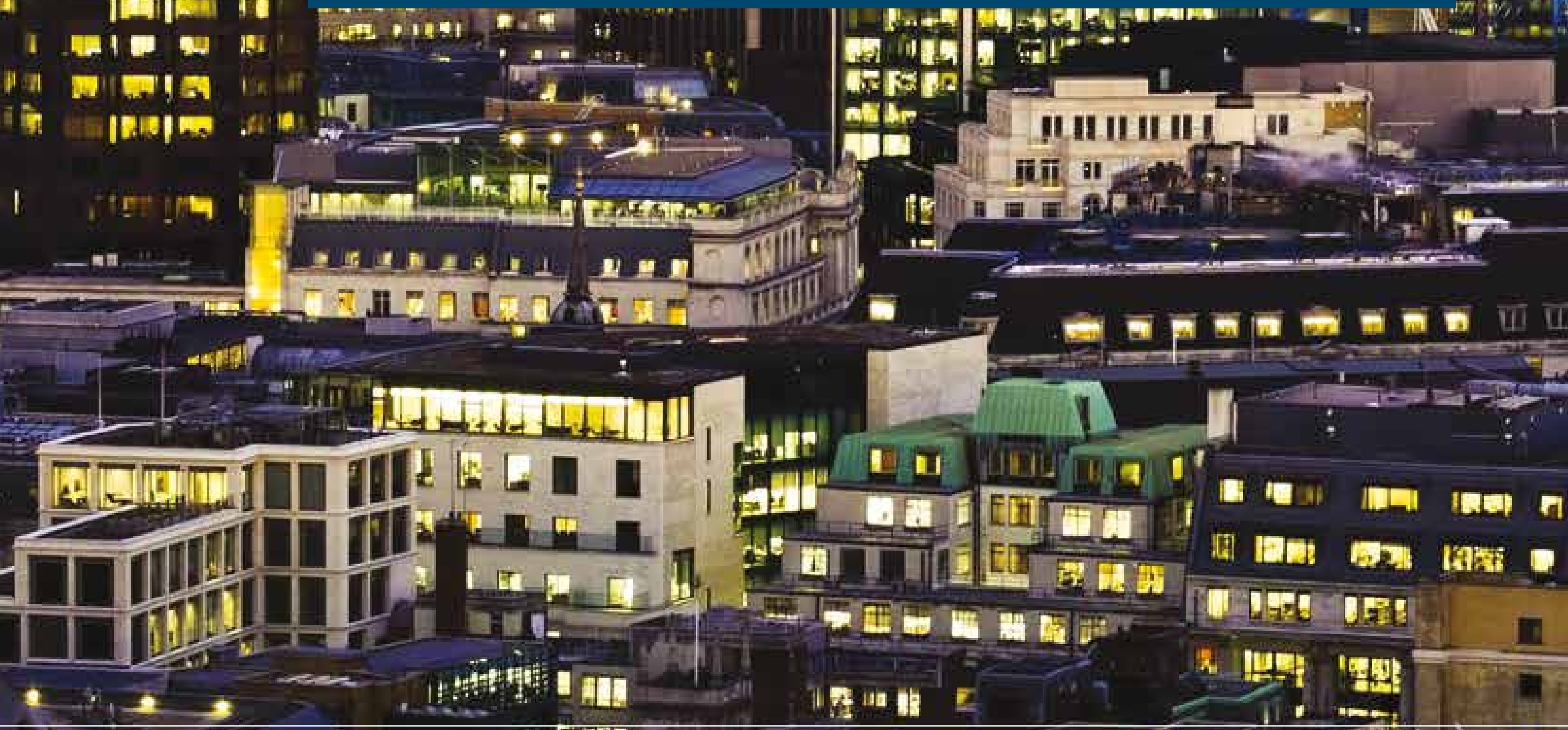
LIPPER FUND AWARDS 2014 UNITED KINGDOM

THOMSON REUTERS LIPPER FUND AWARDS 2015 UNITED KINGDOM

WINNER SIX TIMES Investment Life & Pensions Moneyfacts Awards 2009-2014 Best Ethical Investment Provider

citywire PLATINUM

Rayner Spencer Mills RATED FUND



ABOUT EDENTREE INVESTMENT MANAGEMENT

EdenTree is an investment management firm with a strong heritage of delivering profit with principles. We provide an award-winning fund range managed responsibly by some of the UK's most highly rated Fund Managers. Our formidable investment team has some of the longest permanent track records of any in the City. We believe that consistent, long-term returns are more likely to be achieved by investing responsibly in sustainable businesses. That's why we adhere to our 'Profit with Principles' approach. We firmly believe that the companies still returning results tomorrow will be the ones acting responsibly today, both internally and within their communities.

Our charitable ownership, along with our history, is what drives our values and we're proud to re-invest our profits into the community. We currently offer eight funds; six of which are both positively and negatively screened – and we now have over £2.4 billion[1] of institutional and retail funds under management.

AMITY INSIGHTS

We know it's important for you to get all the information you need when you're making an investment decision. That's why we provide a wide range of factsheets, brochures and reports outlining the different Amity investment options and their aims.

Our document library also includes other interesting information that relates to our socially responsible investment (SRI) activities. This includes a wide range of Amity Insights on a variety of topics. Amity Insights allow us to share the results of our independent and informed SRI research with you. The Insights are available for you to download at **www.edentreeim.com**. The range is constantly growing, so please check back for updates.

THE AMITY RANGE OF FUNDS

Amity is an award-winning range of responsible investment funds that truly stands out. Amity funds consistently deliver for investors over the long term. They achieve this in a principled way under the stewardship of some of the UK's most highly-rated Fund Managers.

We know there is a link between well-managed companies with a clear understanding of their social and environmental impacts, and strong financial returns. We're proud to have repeatedly proved that investors can have both.

OUR INVESTMENT PROCESS

- Profit with Principles – a socially responsible investment (SRI) process – is at the core of everything we do
- Our approach includes a comprehensive in-house SRI research function
- Our funds are both positively and negatively screened:
  - **We actively seek out** companies with a record of involvement and good performance in terms of business practices, community relations, corporate governance, education, environmental management, healthcare, human rights, labour relations and urban regeneration
  - **We avoid** companies materially involved in alcohol production, gambling operations, pornographic and violent material, tobacco production, testing animals for cosmetic or household products, supporting oppressive regimes or strategic weapon production

OUR INVESTMENT PHILOSOPHY

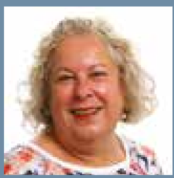
- We take pride in our independent analysis. We're not afraid to adopt contrarian positions and are in favour of long-term investment horizons
- Our decision-making is designed for the long term, as frequent trading increases costs and decreases returns

OUR INVESTMENT OBJECTIVES

- We consider the preservation of capital as our primary responsibility, preferring absolute returns over relative performance
- We believe that consistent long-term returns are more likely to be delivered through investing in responsible and sustainable businesses
- Our Profit with Principles approach consistently proves that investors can have both

1. As at 31 December 2014.

OUR PEOPLE



Sue Round
Director of Group Investments and Senior Fund Manager

Sue is the UK's longest serving retail SRI Fund Manager. She launched the Amity UK Fund 27 years ago – pioneering our Profit with Principles investment approach. She is also A rated by Citywire as of May 2015.

Neville White
Head of SRI Policy and Research

Neville is in charge of our Socially Responsible Investing team. His extensive experience includes being responsible for managing global corporate governance proxy voting for CCLA Investment Management.

Rob Hepworth
Chief Investment Officer and Senior Fund Manager

Rob has previously been voted Investment Week's Fund Manager of the Year and has been recognised as one of Citywire's top 10 Fund Managers of the past decade. This places him in the top 10% of all UK Unit Trust and OEIC Managers.

Ketan Patel CFA
Associate Fund Manager

Ketan began his career on the equity derivatives trading desk at JP Morgan, before moving to Insight Investment as a Global Healthcare Analyst. Ketan leads the team's company research, supporting the Fund Managers' investment decision making. He has been a CFA Charterholder since 2009.

Chris Hiorns CFA
Fund Manager

Chris has worked at EdenTree since 1996. He started as a Graduate Trainee and worked as an Investment Analyst before being appointed as the Fund Manager for the Amity European Fund in 2007 and the Amity Sterling Bond Fund in 2008.

Thomas Fitzgerald
Investment Research Analyst

Having graduated from Oxford Brookes University with a degree in Economics and Business Management, Tom now supports the Fund Managers by providing detailed company research and analysis. Tom is currently studying for the CFA.

Peter Cameron CFA
Associate Fund Manager

Peter is an experienced Equity Analyst having worked both in the Quant solutions and SRI performance and portfolio risk teams at Aviva. He holds a Masters degree in Corporate Governance, and is a CFA Charterholder.

NOTES

How to contact us

We hope you have found this Amity Insight interesting and useful. If you have any questions, or would like to know more about our responsible investment, in-house research and analysis, please get in touch.

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