

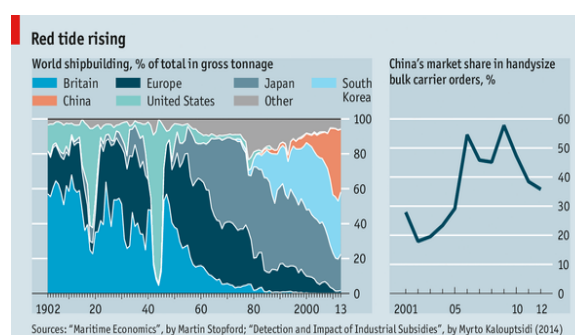
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## Free exchange Tilted marine

**New techniques show the damage done by subsidies at the heart of global trade**

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THERE is no better symbol of the benefits of globalisation than the container ship. More than 9 billion tonnes of goods and materials were transported by sea in 2012, with trade helping to lift global growth rates. An ever-expanding web of links connects rich and poor; developing countries now account for around 60% of seaborne trade. But ships also show the rotten side of trade: protectionism. In 2006 China enacted a “Long and Medium-Term Plan” to enlarge its shipping industry by 2015. It has been successful (see left-hand chart). New research shows its attempts to tilt markets may be having a bigger impact than previously thought.



Protectionism in shipping is centuries old. In a 1905 study\* Royal Meeker, an American economist, explained how a system of subsidies developed under Elizabeth I. Rewards were based on tonnage of ship, and included “bounties” paid to fishing boats heading for the North Sea in search of herring. Adam Smith provided an early economic analysis in “The Wealth of Nations”, lamenting: “It has, I am afraid, been too common for vessels to fit out for the sole purpose of catching, not the fish, but the bounty.” The handouts distorted the shipbuilding industry, resulting in an oversize fishing fleet and a misallocation of resources.

Far from avoiding the distortion Smith spotted, governments have been keen to nurture it. The early logic was military. A strong merchant fleet meant lots of boats that could be commandeered during times of war. One way to bolster shipping has been to grant lucrative contracts for postal delivery: Britain’s Cunard lines benefited hugely from such a deal in the 1830s. Another method, used by both America and Japan in the early 1900s, was easy finance, in the form of cut-price government loans.

Modern shipping subsidies are used to build economic heft rather than military might. Governments like shipping due to the knock-on effects of a booming yard. Modern ships are huge (up to 400m long) and include up to 30,000 parts. Assembling them is labour-intensive, and so is making the parts that outside suppliers provide to the shipyards. A recent report by America's Maritime Administration estimated that more than 107,000 people work in the country's heavily protected shipyards. Adding in the companies supporting the yards, and the shops and services that support these workers, the total ran to 400,000, an employment "multiplier" of 4. So, the idea is, by helping shipping a government indirectly supports workers in many other industries.

Yet economists' views on subsidies have hardened over time. China's policy provides subsidies both for the construction of ships themselves and for the building or expansion of shipyards. These interferences can distort trade, resulting in inefficient production. In deciding whether a subsidy flouts trade rules the World Trade Organisation (WTO) uses a "price gap" approach. The idea is simple: if a country is producing and selling something at a big discount to what others are charging, there is probably something fishy going on.

Price gaps provide a quick warning system, but are a poor way to judge the full extent of subsidies, according to a 2013 book by Usha and George Haley, of West Virginia University and the University of New Haven. It is a static approach, ignoring how demand for each shipyard's differentiated products varies over time. It also fails to account for variations in efficiency. Whereas Chinese workers may be relatively cheap, large South Korean or Japanese shipyards exploit economies of scale that smaller Chinese yards cannot. The balance of all these factors, in addition to subsidies, should influence a shipyard's costs and prices.

From the crow's nest

Recognising this, a 2014 working paper by Myrto Kalouptsidi of Princeton University provides a new way to spot subsidies and measure their impact. Using detailed quarterly data on factors like a shipyard's age, size, capacity and staffing levels Ms Kalouptsidi estimates cost functions—the relationship between a yard's output and its cost of production—for 192 yards across China, Japan, South Korea and Europe. By analysing data between 2001 and 2012, she can isolate the impact of China's 2006 policy.

The results are striking. A simple price-gap approach shows that Chinese ships cost 7.3% less than rivals'. Controlling for quality differences—Chinese ships are seen as lower quality and so should be around 3.5% cheaper, even in the absence of subsidies—gives a 4% gap, hardly justification for WTO rage. But Ms Kalouptsidi's estimates show this is just part of the story.

Government help artificially lowered Chinese firms' costs by between 15-20%. The aid will have included explicit subsidies and hidden benefits, such as tolerating losses at state-owned yards. China's market share jumped as the policy was introduced (see right-hand chart).

As in Smith's day, this has shifted resources. By comparing the costs and productivity of the shipyards in her sample, Ms Kalouptsidi forecasts how the market might have developed in the absence of China's subsidies. Her analysis points to a big resource reallocation: absent the meddling, Japan's market share would have been around 30 percentage points higher. Since many South Korean or Japanese yards are more efficient than China's, it means that the true cost of ship production may well have risen. Bloated by subsidy, China's yards have turned out a surfeit of vessels, often poorly matched to customers' demands.

All this suggests the WTO and other trade-watchers may need to refine their tools to help identify the full extent of subsidies. Other markets are ripe for this kind of analysis. The global glut of solar panels owes much to protectionism, according to the Hayleys' book. Steel markets are badly distorted by subsidies to producers, says the WTO. Subsidised solar panels being exported aboard subsidised ships made from subsidised steel show just how far those that seek free trade have to go.

**Sources:**

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