



# The Bottom Line

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## THE IMPACT OF THE EVER GIVEN ON INTERNATIONAL TRADE

### Summary

Evergreen's MV Ever Given with a capacity of 20,000 TEU has been lodged in the Suez Canal since the 23rd of March, closing the world's busiest waterway and causing delays that are certain to ripple through the whole transportation system.

### Background

The Suez Canal opened in 1869. It connects the Red Sea in the south to the Mediterranean Sea in the north. Although located in Egypt and maintained by the state-owned Suez Canal Authority, under the Convention of Constantinople, it may be used "in time of war as in time of peace, by every vessel of commerce or of war, without distinction of flag." At 193 km (120 mi) in length, the canal was originally only 8 m (26 ft) deep but has been expanded several times over its history. In 2015, the northern half was improved with a second channel to allow for two-way traffic. Today, the channels are over 300 m (984 ft) wide at the surface and 26 m (85 ft) deep. The sides of the channel slope in so that the deepest part of the channel is only 121 m (397 ft) wide. Vessels entering the canal are controlled by a pilot working for the Suez Canal Authority.

The MV Ever Given is owned by Japanese firm Shoen Kisen KK and leased by Evergreen Marine. It is 400 m (1312 ft) long and has a load capacity of more than 20,000 TEU.

### Current Status

Evert Lataire is head of the Maritime Technology Division at Ghent University in Belgium, works with Flanders Hydraulics Research at what he calls the world's most accurately constructed shallow-bottom tow tank. Lataire wrote his dissertation on a hydrodynamic phenomenon as a ship passes close to a bank: the bank effect. When water gets squeezed between a ship's hull and a bank, it speeds up. The water speeds up, the pressure drops, the stern pulls into the bank and, particularly in shallow water, the bow gets pushed away. The more water a ship displaces, the stronger the effect. And the closer the side of the hull is to the shore, the stronger the effect. He believes a brief lull in the west-to-east winds reported on the day of the accident caused

the vessel, which was steering to the left to compensate for the wind, to drift too close to the bank and trigger the bank effect, as demonstrated in this [simulation video](#).

Based on the length of the vessel and the slope of the canal walls, up to one-third of the Ever Given could be aground. It's estimated that over 30,000 tons of thrust would be necessary to tow her off the bank. The largest tug is only capable of 420 tons of thrust.

A team of salvage experts from Smit Salvage had been appointed and were attending to the ship. Dredging operations to remove some of the sand from under the vessel were underway as of Friday, along with continued attempts to re-float the vessel at high tides.

### Impact

"We're such a globally interdependent supply chain that it could well become a massive issue," said Simon Croom, PhD, University of San Diego, Supply Chain Management. More than 10% of all global trade travels through the Suez Canal daily carrying \$9.6 billion in cargo including food, medical supplies, fuel, textiles, and major appliances.

The backlog north and south of the Suez Canal grows daily and is expected to take at least a week to clear at its current level. Once the canal is cleared, ports expecting delayed vessels are likely to be surged. These delays are going to result in container returns to China being affected, which is likely to result in continuing upward pressure on freight rates.

### RESOURCES

[The Bank Effect and the Big Boat Blocking the Suez](#) (Financial Times)

[Ship Stuck in Suez Canal Could Have Ripple Effects in San Diego](#) (CBS News)