

THE CHOICE BETWEEN SEA AND RAIL FREIGHT – WHICH IS THE WINNING MODE? BY JACKIE BERG & LOUISE PETERSSON (JUNE 2021)

Transportation of heavy goods between two continents is a complex process with many decisions. However, it is a strategic important decision for companies to create an efficient supply chain. The choice of transportation mode implies many trade offs and must fit the company's overall strategy. So, which is the most preferential mode for heavy and large goods between Europe and Asia?

Sea freight accounts for almost 90 % of the global trade and is therefore a major part of almost all companies supply chains. Therefore, when the sea freight industry is facing challenges and not functioning as usual it has great effect on the global trade as well as the performance of companies' supply chains. This has been the case because of the covid-19 pandemic. Lockdowns, reduced staff at ports and closed factories have resulted in massive delays, container shortages, raised rates, congestions in ports and issues to secure space on vessels.

In the midst of it all, a ship blocked the Suez Canal, where about 12 % of the global trade passes through, worsening the situation. Due to the many issues in the industry, companies using sea freight are experiencing late deliveries to their customers worsening their customer service and at the same time paying more as the rates have risen. Companies are therefore looking for alternatives to mitigate the issue. However, truck freight is not a solution for intercontinental transport due to the long distance. Air freight is an option, but is expensive and has capacity limitations and is therefore not a suitable option for shipments of large dimensions and weight. Therefore, only rail freight is left as an option.

Rail freight between Europe and Asia has grown substantially over the past years mainly because of the Belt and Road Initiative (BRI). BRI is a project initiated by the Chinese government to develop a network of infrastructure connecting China with the rest of Asia, Europe and Africa. The aim of BRI is to promote trade between the continents as well as to increase cooperation and partnerships of the countries connected to the routes. However, another possibility for rail freight between Europe and Asia is on the Trans-Siberian Railway (TSR) which offers transportation opportunities to northern Asia. Rail freight is a transportation mode suitable for longer distances and has the capacity to transport heavy goods and could therefore be a suitable mode for transporting heavy machines from Europe to Asia. However, rail freight is under development and the infrastructure for this mode is not available everywhere in Asia which results in limited routes.

Three commonly used aspects to evaluate the performance of transportation is service, economic and environmental. These aspects have in this thesis been used to evaluate sea and rail freight between Europe and three countries in Asia: China, Japan and Vietnam. The results showed that rail freight is the best option for transportation to China and Japan. The study showed the opposite result for Vietnam. However, it could be a possibility in the future if the railways are developed. To conclude, rail freight between Europe and Asia is on the rise and it is important for companies to keep an eye on it to have flexible supply chains when sea freight is not performing as it should.

This popular scientific article is derived from the master thesis: *A Comparison of Sea and Rail Freight from Europe and Asia*, written by Jackie Berg and Louise Pettersson.