* Introduction
  + Containerized freight and globalization
    - Maritime shipping has been a vital part of the global economy since the dawn of the industrial era.
    - Containerization in the 1960s further standardized the transport of goods
    - From 1970 to just before the COVID pandemic, shipments of non-bulk dry goods skyrocketed from 717 million to over 8 billion metric tones (UNCTAD 2023)
    - Maritime shipping accounts for around 90% of traded goods (OECD 2023)
  + Questions about competition
    - Since carriers face almost no additional cost to sail a full vessel compared to one that’s partially full, profit maximization among ocean carriers is largely concerned with reducing empty haul.
    - This led to various cooperative strategies among carriers, which coalesced in the post WWII period to the Shipping Conferences
    - Shipping Conferences were widely seen as cartels.
  + Strategic Alliances among carriers
    - Formed after antitrust regulations put an end to the Conference system.
    - Carriers coordinate on capacity sharing, route planning, and other operational functions
      * “in order to improve efficiency, minimize costs, and provide high quality services to the shipping public.” (OCEAN Alliance Agreement, 2024)
      * Unlike most vessel sharing agreements, the geographic scope of SAs encompasses the vast majority of maritime freight movements.
        + The 2M Alliance operates between “ports in Asia (countries in the Japan to Indonesia range) and in Russia, Sri Lanka, United Arab Emirates, Oman, Saudi Arabia, Egypt, Israel, Morocco, and in countries bordering the Adriatic Sea, the Bahamas, Panama and Canada on the one hand and ports on the U.S. Atlantic, Gulf and Pacific Coasts of the United States on the other hand.” (Maersk/MSC Agreement 2024)
    - Carriers may not share pricing information with each other (i.e., the may not collude to raise prices), nor are they allowed to cooperatively market their services.
      * However, carriers in an Alliance must collectively set prices they charge each other for available slots, providing a meaningful price reference to all parties for the rates charged on that service.
      * Alliance members are allowed to share price information with each other related to vessel operating expenses (repairs, fuel), port and terminal costs, and other costs paid to third parties.
* History and Literature Review
  + Shipping Conferences
    - Began at the dawn of steam liner shipping
    - Deemed monopolistic cartels by Alfred Marshal and criticized by Vladimir Lenin as a prime example of the tendency to concentrate capital
    - Globalization caused a re-evaluation of the conference model
      * US Ocean Shipping Reform Act of 1998
        + Eliminated the ability of conferences to collude on prices
      * EU Block Exemption ended 2008
  + Strategic Alliances
    - Largely seen as a replacement for the conferences
    - Analyzed extensively in management literature
    - game-theoretic analysis
    - very little empirical testing of competition
    - very little studies with a regulatory focus
  + Regulations
    - EU Consortia Block exemption (CBER) ended in 2024
      * EU cited that alliances (‘consortia’) no longer provided lower prices and/or better services for transport users
        + Little evidence was provided for this other than general trends of increasing prices and degraded services.
        + The CBER seems to have had little effect on carriers behavior anyway. The EU staff paper states:

“no carrier has identified the CBER, or more generally the scope of the applicable antitrust exemption, as a factor for the decision to enter into a consortium or for the allocation of capacity between independent and joint services”

* Open questions:
  + Do Alliances have an impact on quality of services?
    - Frequency of service
      * Alliances claim that they provide higher service frequencies (Evangelista and Morvillo 1999)
    - Lane options
      * For exports, do shippers have access to more foreign ports due to Alliances?
  + Do Alliances have an impact on price?
    - Lane-month average prices may reveal some, but we do not observe variance within lane based on alliance membership or utilization
    - Detailed data exists on output and excess capacity
  + Do Alliances help carriers operate more efficiently?
    - Excess capacity as a function of alliance utilization (and/or other alliance metrics)
* Models/Theory
  + Type Examples
    - Consider, for example, a beef and dairy producer in Washington State with a container bound for customers in South Korea. In year 20XX, prior to the formation of Alliance A, our producer had an average of N sailings from M different carriers each month on which to send her container. By 20XX, there were n sailings from only m carriers to choose from. If one were so inclined as to count Alliance A as a single entity, her choice of competing carriers drops to µ.
      * Alliance carriers will be quick to point out that they are not allowed to collectively sell their services nor to share rate information with each other, and they are independently responsible for their own operating costs. If rates are confidential and costs are born independently, how then could they be considered as a single player in this market?
      * Recall that the Alliance agreements authorize the parties to share vessel, port, and various other operating costs with each other. So it may be that Alliance members, each knowing what the other is being charged for their various factors of production, are able to collectively bargain on factor costs[[1]](#footnote-1). One of the primary purposes of the Alliances is, after all, to cooperate to minimize costs.
      * Perhaps more importantly, all parties in the alliance *must* negotiate to set the rates that they charge each other for shared cargo. Thus Carrier A knows *a priori* what their ally would charge to carry the container in the event that Carrier A sells the service to our producer and moves the container on their ally’s ship under the Alliance agreement. That is to say that Carrier A, knowing the price they would be charged by their ally to provide the service in question, must have a pretty good idea of the rate their ally would charge our beef and dairy producer directly for the same service.
      * Critically, the ally’s price was not discovered in the way a competitors price might be; it was negotiated beforehand by the alliance members.
    - All this to say, under the current structure of Alliance agreements, it’s possible to imagine a situation in which allies might effectively collude on rates. The assumptions of our example above, however, may limit the potential scope of such behavior.
      * Consider that Carrier A may have entered the Alliance in order to expand their services Seattle to Busan. Their ally, on the other hand, may have already been efficiently meeting demand on that lane and thus willing to accept a slot sharing price lower than their regular rate in order to gain access to markets previously only served by Carrier A. If this were the case, the negotiated slot sharing price may not be a good proxy for the rate that their ally would directly charge our shipper, and Carrier A would have no direct means of discovery.
    - This difference between the slot sharing rate and the regular rate would not likely persist when Carrier A and their ally compete for the same shipper; however, when the total number of shared slots are small compared to the total capacity on that voyage, such a differential might indeed persist—the lower rate shared slots would quickly be sold leaving the ally able to sell the remaining capacity at rates independent of the shared slot rate.
      * In other words, the average rate on a given voyage should approach the shared slot rate as the percentage of the vessel’s capacity devoted to the carrier’s allies increases.
      * Thus for services where sharing between allies is high, each carrier’s direct rate would be close to the negotiated slot sharing rate, which in turn creates an opportunity for price setting behavior.
      * (I imagine this sounds convoluted, but it makes sense in my head!)
  + Alliance Activity
    - A major factor apparently missing from the literature on SAs is the fact that SAs are not uniformly utilized across lanes and time.
    - Recognizing that SA activity varies between lanes and over time, it is imperative to account for this variance. After all, there should be negligible impact on the freight economy where the SA is not particularly active.
    - We propose a simple metric for SA activity: the ratio of shared cargo volumes dedicated to alliance partners.
  + Frequency of Service
  + Price
  + Output and/or excess capacity
* Data
  + Sources
    - PIERS
    - Drewery
    - Alliance membership
  + Data issues?
    - Missing TEU data, etc
  + Summary Tables
* Results
* Discussion
* Conclusion

1. This is, to be clear, purely conjecture. Alliance agreements to do not require the sharing of cost information, and it may very well be that each Alliance member’s optimal strategy is not to share such information (never mind to collectively bargain). The point for now is only that there is nothing specifically barring Alliance members from doing so. [↑](#footnote-ref-1)