Italian Access to the Atlantic  
During the Development of Long-Distance Oceanic Trade

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Abstract  
This paper aims to provide historical background on a tacit assumption made in Acemoglu, Johnson and Robinson’s article, “The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth.” (2005) They build a model explaining the growth of Western Europe based on a country’s potential for Atlantic trade between 1500 and 1850. They assign a value of zero to Italy’s potential for Atlantic trade. This paper explores the justification of this by assessing the degree to which Italy had access to Atlantic trade throughout this period. The paper also aims to explain why Italy in fact did not participate in transoceanic trade even though this trade was controlled by Italian republics for centuries prior to the opening of the Cape Route.

1 Introduction

The motivation for this paper is drawn from Acemoglu, Johnson and Robinson’s (AJR) article, “The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth.” In this article, AJR aim to show that the unprecedented growth in Western Europe between 1500 and 1800 took place almost exclusively in countries with access to the Atlantic, and was largely due to the impact of trade with Asia, Africa and the Americas via the Atlantic on these economies. They argue that there was a crucial interaction between institutions established within a country before the onset of intercontinental Atlantic trade and that country’s access to the Atlantic, and that it was this interaction that drove the divergent growth of Western Europe. More specifically, they claim that among countries with access to the Atlantic, those with relatively non-absolutist governments, like England and the Netherlands, experienced a higher degree of growth than those with strict monarchies, like Spain and Portugal.

Building on this logic, they formulate the following model to test their claim that growth after 1500 was due primarily to a high potential for Atlantic trade:

\[ u_{jt} = d_t + \delta_j + \sum_{t \geq 1600} \alpha_t \cdot WE_j \cdot d_t + \sum_{t \geq 1500} \beta_t \cdot PAT_j \cdot d_t + X_{jt} \gamma + \epsilon_{jt} \]

where \( u_{jt} \) is urbanization in country \( j \) at time \( t \), \( WE_j \) is a dummy indicating whether the country is in Western Europe, the \( d_t \)'s denote year effects, the \( \delta_j \)'s denote country effects, \( X_{jt} \) is a vector of other covariates, and \( \epsilon_{jt} \) is a disturbance term. \( PAT_j \) is their measure of country \( j \)'s potential for Atlantic trade. The parameters of interest are the \( \beta_j \)'s, as they are supposed to represent the effect of access to the Atlantic on growth. AJR note that the historical
outcome of whether or not a country engaged in Atlantic trade is clearly endogenous to the model and should not be used as a measure of a country’s potential for Atlantic trade. Instead, they create an exogenous geographic measure for $PAT_j$, which is simply a country’s Atlantic coastline to area ratio.\(^1\)

By definition, this exogenous measure tacitly imposes the assumption that Italy had no potential for Atlantic trade. This assertion, however, seems rather puzzling and I believe it requires substantiation. What exactly is meant by potential for Atlantic trade? Prior to the discovery of the cape route to Asia, the Italian maritime republics of Venice and Genoa controlled much of the importation of Asian goods into Europe, collecting the goods from the Eastern Mediterranean after they had passed overland through the Levant and sailing them back to Italy. Additionally, both of these republics had highly non-absolutist, commerce supporting institutions, which according to AJR played an important role in the development of trade and growth. Thus, it seems highly likely that there was great incentive for Italians to participate in Atlantic trade in an effort to retain some of their share of this highly profitable trade. Historically, though, Genoa and Venice did not engage in significant amounts of Atlantic trade. For this reason, limitations on Italian access to the Atlantic seem very plausible. In this regard, the puzzling nature of Italy’s position in maritime commerce during the development of transoceanic trade should be examined and the validity of AJR’s implicit assumption about Italy’s potential for Atlantic trade should be assessed before relying on the results of their estimation.

### TABLE 1

<table>
<thead>
<tr>
<th>Parameter $\beta_1$</th>
<th>Estimate</th>
<th>T-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
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</tr>
<tr>
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<td>5.85</td>
</tr>
<tr>
<td>$1850$</td>
<td>5.05</td>
<td>9.90</td>
</tr>
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</table>

The estimates from AJR’s model are presented in Table 1 above. I obtained the data set they used to fit this model and re-estimated their equation, giving Italy a positive value for its potential for Atlantic trade variable. In particular, I follow AJR’s definition of $PAT_j$ and use Italy’s coastline to area ratio.\(^2\) This procedure is not done in order to attain more “correct” parameter estimates, but to show the sensitivity of their parameter estimates to such assumptions as the zero potential for Atlantic trade in Italy. Table 2 below presents my results.

### TABLE 2

<table>
<thead>
<tr>
<th>Parameter $\beta_1$</th>
<th>Estimate</th>
<th>T-Statistic</th>
</tr>
</thead>
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<tr>
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<tr>
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</tr>
<tr>
<td>$1850$</td>
<td>3.97</td>
<td>7.08</td>
</tr>
</tbody>
</table>

\(^1\)Acemoglu, et al., Rise of Europe, p. 552.

\(^2\)I collected this geographical data from the same source as Acemoglu, et al. (2005): Integrated Coastline Management (on the web at http://icm.noaa.gov/country/ICM-pro.html).
We see that qualitatively, the results are fairly similar. However, including Italy yields a higher effect of access to the Atlantic on growth in earlier years, and lowers the effect in later years. This is what we would imagine, considering that Italy experienced the reverse trend of the Atlantic coastal nations over this period: Italy began this period relatively wealthy, and ended this period relatively poor. Although the qualitative results are similar, quantitative results are differing to the degree in which we should provide sufficient validation of the restriction on Italy’s access to the Atlantic in order to draw numerical inferences. For instance, AJR state that “the coefficient $\beta_{1850} = 5.05$ indicates approximately 6.5 percentage points more urbanization growth in the Netherlands than in Italy between 1300–1400 and 1850 (the Atlantic coastline-to area ratio for the Netherlands is 0.013 and for Italy it is 0). This explains over half of the differential 12-percentage-point actual urbanization growth between Italy and the Netherlands between these two dates.”³ To make such exact claims, I believe further evidence on Italy’s potential for Atlantic trade should be provided.

The purpose of this paper is two-fold. First, it examines how Italian access may have been limited during the rise of transoceanic trade. This will help shed light on the validity of the restrictions assumed in AJR’s model. Second, I hope to provide some resolution to the puzzle of Italy’s abstention from transoceanic trade.⁴ My examination of Italian access to the Atlantic follows a list of potential hindrances proposed by Brown in The Venetian Republic.⁵ I begin by considering the Italian shipping industry and whether or not factors of this industry kept Italians out of the Atlantic. Next, I address the issue of piracy. The fourth section considers external political constraints on the Italian republics. Finally, in the fifth section I highlight the key factors in the demise of Italian shipping industries, and the ultimate loss of access to the Atlantic for Italy.

To anticipate what is to come, I will argue throughout that Italian access to the Atlantic was in fact not limited until the decline of the shipping industries in the late 1500s. Instead, the reason that we did not see Italians take on transoceanic trade resulted from powerful incentives keeping the Italians within the Mediterranean. I will show this was the case even after the discovery of the Cape Route to the Indies. However, due to an acute resource constraint, a quick reorganization of maritime power occurred in the Mediterranean, leading to the demise of Italian trade.

2 Italian Ships and Shipping Industries

In this section we will explore the state of Italian shipping during the period surrounding the advent of intercontinental Atlantic trade. Our concern lies in assessing how elements specific to the shipping industries of the Italian maritime republics may have contributed to their lack of participation in long distance Atlantic trade. Thus, we will consider the seaworthiness of Italian vessels during this period relative to the vessels of the Atlantic traders. Also of concern is the degree to which naval technology spread through Europe and the degree to which Italians received and incorporated new technologies into their shipping practices. We will also consider two factors specific to Italy and the Mediterranean that both shaped and limited Italian shipping industries: a continual need for naval strength and protection of merchant ships due to an ongoing power struggle in the Mediterranean and the limited supply of shipbuilding materials. To properly address these issues we must first understand some basic characteristics of Italian sailing during the late medieval and early modern periods.

⁴My attention in these endeavors will be limited to Venice and Genoa, as they were the prime candidates out of Italian states to participate in oceanic trade.
⁵Brown, Venetian Republic, p. 138-139.
2.1 Background

Two distinct types of ships comprised Italian fleets: the galley and the round ship. The galleys were low, long ships with a single deck, oars and were originally rigged with a lateen sail on a single mast. The ships typically held between 140 and 250 tons of cargo underdeck. The low, narrow profile of the galley gave it exceptional speed and agility, and with the additional endowment of oars, it was a highly maneuverable craft. Such characteristics also made the galley an excellent warship, especially before the prominence of guns, when hand-to-hand combat was critical. The maneuverability enabled the galley to both initiate battle and easily retreat. Furthermore, the immense manpower necessary to man the oars, along with a stash of arms in the hull, provided a powerful fighting force. Evidence of such power is apparent as the Venetian senate mandated in 1412 that the crew of a galley number at least 210, of which 171 were oarsmen. The rest were bowmen who roamed the deck armed with a crossbow or, after 1486, an arquebus. With three or four galleys together, such a fighting force was considered sufficient to handle even the worst of pirate fleets. Large crews were standard on galleys; Genoese galleys also had a crew of this size.

Contrastingly, the round ship was the more familiar sailing ship, solely dependent on wind locomotion. The crafts had high and wide profiles, multiple decks and a much larger cargo hold than the galleys. The high decks, relative to the galley, gave the ships some defensibility. However, it was not until the advent of artillery that the round ships were safe from galley raids. As a result, they were not considered a safe method of transportation.

This dichotomy of vessels, along with the nature of maritime commerce in the Mediterranean, gave rise to the specialization of the different crafts by Italian shippers. This specialization was mainly the result of a constant need for protection of valuable cargoes: galleys carried precious goods, where round ships were limited to the transportation of bulk goods of little value. The Mediterranean was rather calm in terms of sea and weather. Yet in terms of international rivalry and conflict it was anything but calm during the late middle ages and well into the early modern period. During the thirteenth and fourteenth centuries the maritime republics of Italy, namely the Republics of Venice and Genoa, and to a lesser extent, Florence, were vying for commercial supremacy in the Mediterranean. Additionally, tension remained between Muslims and Christians, and both Muslim and Christian pirates roamed the sea and disturbed commerce, which will be discussed in greater detail later.

By the end of the thirteenth century, well defined colonial and commercial trading networks were established by Genoa and Venice in the eastern Mediterranean. Genoa primarily held trading establishments in the upper Aegean, around both the Black Sea and the Sea of Azov, and on Cyprus. Venetian merchant colonies, on the other hand, were primarily concentrated in the lower Aegean and the Adriatic. The development of these distinct trading networks of Venice and Genoa, however, was not a peaceful process. From the onset of Genoa’s participation in long-distance trade in the Mediterranean, the state openly used violence as means for creating markets as well as protecting and capturing trading networks. The violence culminated in four wars between Genoa and Venice over

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6The term round ship here implies a large sailing ship. The term is taken from Lane (1934)
7A lateen sail is a triangular sail hung from a long yard, essentially a pivoting rod, that is attached to the mast in a fore-and-aft orientation.
8Lane, Venetian Shipping during the Commercial Revolution, p. 5.
9Lane, Venetian Ships, p. 6.
10An arquebus is an early form of a large rifle.
11Ibid., p. 24-25.
12Kirk, Genoa and the Sea, p. 39.
13Lane, Venetian Ships, p. 27.
14Pugno de Divittis, English Merchants, p 45.
15van der Wee, European Long-Distance Trade, p. 18.
16Kirk, Genoa and the Sea, p. 10.
the 125 year span between 1255 and 1381.\textsuperscript{17}

This entanglement of warfare and trade had a distinct effect on the nature of merchant fleets, handing the lead role in Italian shipping to the well-protected galley over the round ship until the sixteenth century.\textsuperscript{18} A Venetian account presented in Lane (1934) describing a surprise encounter between an unprotected caravan of Venetian round ships and a fleet of Genoese galleys in the Adriatic in 1264 makes the specialization of ship types clear. The galleys, with their greater speed, were able to catch and initiate battle with the round ships. The crew of the smaller round ships took up arms to defend themselves while retreating into the largest of the round ships. All of the smaller Venetian vessels, filled with bulky, relatively cheap merchandise like oil and honey, were lost to the Genoese.\textsuperscript{19} This account highlights the key features of the galleys and the round ships. That is, the supremacy of the galley as a warship and the round ship’s role as the transporter of bulky goods of low value. Events like these, which were frequent during the first two wars between Venice and Genoa, drove the Venetian senate to require that defensibile galleys take precedent in Venetian trade. In 1299 they required that goods be brought to Venice in armed ships of crews of one hundred or more.\textsuperscript{20} The involvement of the state escalated further throughout the fourteenth century as they began carefully regulating galley fleets, culminating in a full monopoly to galleys from 1435 to 1514 with respect to the transportation of valuable, non-bulky goods, such as spices, silk and currency, to and from Venice.\textsuperscript{21}

Prior to the Portuguese rounding the Cape of Good Hope, Italian shippers were nearly in complete control of the re-export trade\textsuperscript{22} of East Asian and Middle Eastern goods acquired in the Levant to the rest of Europe.\textsuperscript{23} This adds yet another dimension to the prominence of galleys up until the opening of the cape route. This fact meant that, as touched on above, Italian fleets were responsible for transporting all of the goods of extremely high value, yet low in weight like spice and silk, from the Levant back to Europe. For goods like these, a high level of protection was imperative, and hence galleys were the natural, and, in the case of Venice, required method of transportation. But additionally, the fact that the Italians, and in particular the Venetians, had essentially complete control over the spice trade from the Levant, gave them freedom to employ the vessels of their choice, which happened to be galleys, without too much concern on the associated freight price. Hence around the turn of the sixteenth century, just before the Portuguese challenged the Italian dominance of re-export trade of Asian goods to Europe, it appeared that galleys were the key players in Italian shipping fleets. However, although galleys carried the goods of the highest value, astounding developments in the technologies of round ships in the fifteenth century led round ships to be of similar, yet less noted, importance as galleys by 1500. For instance, by the mid-1400s, the total capacity of the round ships of the Venetian fleet was more than three times the capacity of the galleys.\textsuperscript{24}

Thus it is clear that both types of ship, the galley and the round ship, had a significant status in the fleets of Italian maritime republics around 1500. This fact is often overshadowed by the economic structure of Mediterranean commerce at the time, which was driven by the lucrative spice trade, that assigned the galley the star role in commercial shipping. After all, it was this central status of the spice trade in the Mediterranean economy and the associated desire to obtain a share of it that motivated Portugal and Spain to initiate oceanic exploration in the

\textsuperscript{17}Epstein, \textit{Genoa and the Genoese}, p. 240.
\textsuperscript{18}Lane, \textit{Venetian Shipping during the Commercial Revolution}, p. 4.
\textsuperscript{19}Lane, \textit{Venetian Ships}, p. 4-5.
\textsuperscript{20}Ibid., p. 14.
\textsuperscript{21}Lane, \textit{Venetian Shipping during the Commercial Revolution}, p. 4.
\textsuperscript{22}I define re-export trade here as the exportation of an import that is still in its original form.
\textsuperscript{23}Lane, \textit{Venetian Ships}, p. 27.
\textsuperscript{24}Lane, \textit{Venetian Shipping during the Commercial Revolution}, p. 7.
1400s. Even though round ships played a more low key role in maritime commerce, their significant existence in Italian fleets makes it necessary to assess limitations of both the galley and the round ship in determining how the nature of Italian ships may have prevented Italian states from engaging in transcontinental oceanic trade.

2.2 Performance of Italian Ships in the Atlantic

Given the fact that Italian fleets placed central importance on the galley during the period in which the intercontinental Atlantic trade routes began to develop, it is natural to begin questioning the seaworthiness of Italian ships with attention on the galley. Was it the case that Italian galleys could not withstand the Atlantic waves, as Brown asserted? There is indeed much evidence of the galley’s poor performance in an oceanic setting, outside of the calm Mediterranean.

First, as Brown alluded to, the hull of the galley was not designed with rough oceanic conditions in mind. The low, narrow profile of the galley sacrificed the ability to perform well in oceanic conditions outside of the Mediterranean in favor of speed. In fact, records exist from the sixteenth century documenting complaints from galley commanders stating that the decks were too low and chronically swept by waves. In 1570 a formal decree by the Venetian senate mandated that galleys be built higher and wider in response. However, by the close the sixteenth century, galleys returned to their previous low profile. The instability of the Italian galley’s hull in rough conditions is further exemplified by comparing the fate of Italian galleys to those of Turkish ships during a storm. The two fleets were brought together during the Battle of Lepanto in 1571, and when a storm broke out, it was the Italian fleet that suffered most of the damage. Given this instability, the galley’s use was in limited in both time and space: the necessity of calm conditions restricted galley voyages outside of the months from March to November, as well as voyages beyond calm seas, like the Mediterranean and the Red or Black seas. This problem was intensified after the introduction of the cannon and naval artillery. The heavy loads of artillery would sink the bow of the galley yet further into the waves.

The rigging of the galley was also a detriment to its oceanic abilities. The rigging design used to support lateen sails created danger in strong winds and poor weather conditions. The danger resulted from the sail hanging off a pivoting yardarm, which could swing erratically in the wind and required considerable effort to control. Furthermore, lateen sails were inefficient at capturing the full potential of the wind. The same end of the yardarm always had to remain pointing windward, as opposed to other rigging designs which could alternate depending on wind conditions. Additionally, as a consequence, when tacking windward the oars of galley on the opposite side of the ship would drag in the sea. This proved to be both cumbersome and reduced the speed of the ship by over half, yet also led to the breaking of many oars. This problem became so severe that it often prompted galley commanders to leave two-thirds of the ship’s oars behind.

Finally, undoubtedly the most detrimental characteristic of the galley in regards to its success as a long-distance oceanic trading vessel was its cost. Recall that crews on galleys, due to the large number of oarsmen needed,
consisted of well over 200 men. However their cargoes were limited to the range of 140 to 250 tons. Thus around one man for each ton carried was needed. On the other hand, large round ships required approximately only one man to each 4 to 8 tons carried.34 Simply put, in terms of crew payments alone, galley shipments cost 4 to 8 times more. It is important to note that oarsmen during this time were not slaves, and, at least in Venice, their fair payment was overseen by the senate.35 As discussed above, the conditions of the Mediterranean created economic justification for the transport of light wares of high value, for which the shipping cost constituted only a small portion of the final selling price, on galleys. Galleys were undeniably the safest method of transportation in the Mediterranean in terms of security and weather for the two centuries leading up to 1500.36

However, distances from any Mediterranean port to another represent a mere fraction of the length of any trans-Atlantic shipping route. Thus, this economic justification would fail to hold for voyages of great distances. It even failed to hold for journeys as short as the one from Venice to the English channel as soon as round ships became significantly developed to reliably sail on that voyage around 1480.37 Furthermore, given the small cargo space to crew size ratio of galleys, there is no way an adequate amount of provisions could be stored on board to feed the large crew throughout a voyage of length comparable to that of a transcontinental journey. Even in the Mediterranean frequent stops to obtain food and water for galley crews were necessary.38 But any time efficient journey across the Indian Ocean would require sailing away from the coast, and hence from food and water, for long periods, rendering the galley an unacceptable craft for such a voyage.

Unlike the galley, the round ship did not have defining characteristics such as a low profile or a dependence on oarsmen that inherently limited its ability to sail in the ocean. The only limitations placed on the round ship corresponded with the development of naval technology – developments which I will discuss in further detail momentarily. For instance, until the middle of the fifteenth century, round ships also relied on basic lateen sail rigging. Thus they were subject to the same sailing constraints as galleys in this regard. Furthermore, without oars like the galley, the remedial rigging of round ships prior to the mid-fifteenth century made them quite difficult to maneuver.39 However, by the end of that century and after great advancements in rigging, large classes of round ships existed in Italy that were similar in design and seaworthiness to the Portuguese caravels used in their famous oceanic voyages of exploration.40 Hence beyond the implementation of evolving naval technologies, there were no limitations on the seaworthiness of Italian round ships. This fact is further supported by an anecdote reported in Lane (1934). In the anecdote, a Venetian contemporary recalls the starkly differing fates of two Venetian galleys and a Venetian round ship amidst a storm during a journey to the European Atlantic coast in 1495. The two galleys were destroyed and all of their were men lost to the sea. Contrastingly, the round ship was able to ride out the storm unscathed.41

2.3 Italian Atlantic Voyages

Before continuing further, it is important to make one point clear. That is, regardless of the mentioned difficulties Italian ships may have faced in oceanic settings, evidence shows that a significant number of Italian voyages

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35 Lane, *Venetian Ships*, p. 6-7.
36 Ibid., p. 25.
39 Lane, *Venetian Ships*, p. 28.
40 Ibid., p. 52.
41 Ibid., p. 28.
did take place in the Atlantic. Thus, although some limitations existed, they were by no means strong enough to completely block Italian access to the Atlantic. This holds true for both the round ship and the galley.

Documented Italian voyages in the North Atlantic date all the way back to 1277. During this year Genoa established its first merchant colonies in England and Flanders.\(^42\) A few years later, in 1307, Venetians began making the voyage as well, calling at ports in Portugal, Spain, France and South Hampton before reaching their primary markets of Flanders. Cogs, a type of round ship, and galleys, were used initially by the Venetians. However by 1314 the senate mandated the exclusive use of galleys to ensure a timely and safe voyage.\(^43\) Recall at this time round ships were far less maneuverable and quite vulnerable to attack. By the mid-fifteenth century, after rigging improvements, round ships made the voyage as well, initially transporting wine and oil from Crete to England.\(^44\) The Republic of Florence was also a competitor along this route at this time as they engaged heavily in the trade of English wool.\(^45\) Van der Wee (1990) also claims that it was only the consolidation of the Hanseatic League’s trading network in the far north that prevented Italian Republics from establishing trading links of even greater distance than Flanders.\(^46\)

It is worth adding that these oceanic trading relations between Italy and Northern Europe were in no way tenuous in nature. It was not the case that only a few successful oceanic voyages were undertaken by Italians. Quite on the contrary, beginning from the initial establishment of the merchant colonies in the North during the early fourteenth century, trade from Italy to Northern Europe was regular and voluminous. The new sea route completely overshadowed the overland route which Northern Europe previously relied on to obtain Asian goods carried from the Levant to Italy. Chaunu (1983) estimates the oceanic trade between these two centers in the early 1400s at 8000 tons per year; 6,000 carried by Genoa, and the other 2,000 by Venice. This was 40 times the volume carried on the overland route prior to Italian voyages by sea.\(^47\)

These patterns continued for some time. Three quarters of a century later, in 1376, around 20% of Genoese trade took place in the North Atlantic.\(^48\) Table 3, below, shows that this trade was a lasting staple of Venetian maritime commerce as well.\(^49\) The figures in the table are only for round ships, thus in addition to these values, further trade with Flanders existed via galley convoys. We see that the trade in the Atlantic was both regular, at an average of 3 voyages per year, and represented a significant portion of all of Venetian trade. Furthermore, the years between 1449 and 1559 saw similar trends.\(^50\)

**TABLE 3**

<table>
<thead>
<tr>
<th>Voyage</th>
<th>Ships in 1448-9</th>
<th>Ships in 1558-9</th>
<th>Tons in 1448-9</th>
<th>Tons in 1558-9</th>
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<tr>
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<td>12</td>
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<tr>
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<td>3</td>
<td>3-4</td>
<td>1,300</td>
<td>1,680</td>
</tr>
</tbody>
</table>

From this evidence we infer that Italians had the capacity to sail in the Atlantic in spite of deficiencies in their ships. Room for improvement existed, but a significant amount of oceanic sailing was indeed accomplished by...
the Italians. In some regards Italians actually held great skill in oceanic ventures: in 1509 the Venetian galleys in
South Hampton returned to Otranto, on the heel of Italy’s boot, a distance of 2,500 miles, in only 31 days. This
was regarded as a record time by any European standards at the time.\textsuperscript{51} Ultimately, however, this trend did come
to an end. By the seventeenth century Italian merchant colonies in the North began to vanish and Italian ships in
the Atlantic became scarce. Seeing as Italian ships at one time were common in the Atlantic, we must consider
elements of Italian shipping beyond the mere inability of ships to function in oceanic conditions to understand
Italy’s limited access to the Atlantic.

2.4 Evolution and Adaptation of Italian Shipping

Now we will examine the degree to which Italian republics were willing and able to adapt their fleets to accom-
modate advances in naval technologies and changes in the structure of maritime commerce. Many sources, such
as Hagedorn and Pagano di Divitiis, claim that Italian Republics built ships only considering regional importance,
missing to adopt foreign technologies over their Mediterranean traditions.\textsuperscript{52} This, however, does not seem to be the
case, as there is ample evidence of Italians incorporating foreign developments into their designs. Furthermore,
Italians appeared willing to alter their fleets to a certain extent.

Northern European ships and Mediterranean ships developed from distinct traditions. The North emphasized
square sails and designs compatible with a variety of weather conditions where as the Mediterranean, as we have
discussed, emphasized lateen sails and oars. Yet the two distinct traditions where not isolated. In 1303 Basque
pirates began sailing ships of the Northern tradition into the Mediterranean and Italian shipbuilders readily adopted
two key components they observed on these new ships: square sails and the sternpost rudder.\textsuperscript{53} Both of these
adaptations led to greater performance and safety in rough, oceanic seas. Prior to the sternpost rudder, Italian ships
relied on rudders manually extended from the sides of the ship which were difficult to operate in poor weather.\textsuperscript{54}
The inefficiencies of lateen sails were already discussed above. Evolution in the rigging of the round ship was the
next big achievement, arriving from the Atlantic nations in the mid-1400s. The main mast was moved to the center
of the ship and a host of new sails were added, granting the ship much greater maneuverability which approached
that of a galley. Such riggings were universal throughout the North and Mediterranean by 1485.\textsuperscript{55} The evolution
of round ships was so great that by 1485 they looked more like the sailing ships of 1785 than they did like those of
1425.\textsuperscript{56} Italians also developed new hulls in the 1400s similar to those used by Atlantic nations for oceanic trade
in the years to come.\textsuperscript{57}

Additionally, the shipping industries in both Venice and Genoa were driven by careful attention to profits.
Pike describes the Genoese as calculated and materialistic; each action taken was preceded by an examination
of the economic consequences and realizable profits.\textsuperscript{58} Similarly, regarding the Venetians, Lane describes them
as “efficiently capitalistic”: For centuries prior to the opening of the long-distance oceanic routes they had been
seeking and finding profitable ventures outside of the Mediterranean and were leaders in the collection and synthesis

\textsuperscript{51}Lane, Venetian Ships, p. 16.
\textsuperscript{52}Pagano de Divittis, English Merchants, p. 37 and Hagedorn, Entwicklung der Wichtigsten Schifftypen, p. 54-62.
\textsuperscript{53}Lane, Venetian Ships, p. 37.
\textsuperscript{54}Ibid., p. 12.
\textsuperscript{55}Ibid., p. 42.
\textsuperscript{56}Oppenheim, History of the Administration of the Royal Navy, p. 40.
\textsuperscript{57}Lane, Venetian Ships, p. 44.
\textsuperscript{58}Pike, Enterprise and Adventure, p. 11-14.
of information enabling profitable endeavors.\textsuperscript{59} Proving true to this disposition in terms of fleet composition, the republics displayed willful adaptation of their fleets in the face of structural shifts in Mediterranean commerce. Around 1500, justification for extensive use of galley convoys no longer existed. The improvements in the round ship, along with the introduction of artillery, made the round ship nearly as safe a method for the transport of goods as the galley. Furthermore, by this time Italy was sharing the spice trade with Portugal, and therefore the volume of spice in need of careful transport was reduced. Hence to remain competitive and continue earning profits, Italian shippers shifted attention from the galley to the round ship. After 200 years of supremacy among Mediterranean merchant fleets, the galley was virtually eliminated from commercial use between 1500 and 1535.\textsuperscript{60} At this point the round ship began taking over the voyages previously delegated to galleys.

Crucially, we see that Italian republics had the ability to construct ships similar to those used by the Atlantic coastal nations to conquer the seas, and they exercised this ability prior to the opening of transcontinental trading routes. Furthermore, this ability to construct ships similar to the contemporary ships of the Atlantic coastal nations continued in the seventeenth century, even after Italian ships began disappearing from the Atlantic. This is evident as Genoa built 18 of the 70 ships accumulated by Spain between 1617 and 1623 for use in the Spanish transcontinental trading fleet.\textsuperscript{61} Thus it is clear that Italians were not ignorant to developments in naval technologies, and that it was not a backwards shipping industry that kept Italians from trading in the Atlantic.

However, critically, Italians faced difficulties in implementing these new technologies as efficiently as their foreign counterparts. Indeed, new information regarding developments in ship designs readily reached Italian shipwrights, and shipwrights readily sought to implement them. But as we will see, resource constraints hindered the efficiency of such efforts. This aspect, exacerbated by foreign competition, will ultimately play a key role in the disappearance of Italy’s Atlantic trade.

### 2.5 Supply Constraints

A limited supply of timber necessary to build ships began to be apparent in Venice shortly after the middle of the fifteenth century. The developments of the round ship in the 1400s saw this class of ship gain a prominent status in Mediterranean fleets by mid-century. The Venetian merchant fleet had an estimated 35 great round ships that carried over 240 tons, contributing roughly 15,000 tons of cargo space in total to the merchant fleet. The significance of these ships is made clear by their cargo capacity relative to the galley fleet. The galley fleet was made up of only 18 to 20 ships, and could carry a total of only 4,500 tons in cargo. But a quarter of a century later, the private ship building industry in Venice fell into depression and the round ship fleet count fell to half of its original level.\textsuperscript{62}

The cause of this depression was due to lack of timber to support expansion of the industry. The forests which surrounded the Venetian lagoon had been the source of Venetian timber used by shipwrights for hundreds of years prior. By the mid-1400s the groves had been so heavily forested, that shipwrights were forced all the way to the foothills of the alps to find timber. The lack of supply brought the building of round ships to a complete standstill between 1463 and 1488. During this time competition with Venice’s previously strong fleet of round ships began to mount, as Venice faced difficulties in maintaining its mid-century trade volumes given its declining supply of ships. The competition began as a local phenomenon; Venetian neighbors in the Adriatic began picking up Venice’s share

\textsuperscript{59}\textit{Lane, Maritime Republic}, p. 144 and 275.
\textsuperscript{60}\textit{Lane, Venetian Ships}, p. 26.
\textsuperscript{61}\textit{Kirk, Genoa and the Sea}, p. 45.
\textsuperscript{62}\textit{Lane, Venetian Shipping during the Commercial Revolution}, p. 5-10.
of local trade, as they were unaffected by resource constraints and could operate more cheaply. Venice attempted to mitigate this problem by banning the building of foreign ships in or near Venice and levying an anchorage tax on foreign ships in an attempt to motivate the Venetian industry. The Venetian senate also banned Venetians from buying foreign ships, building Venetian ships in foreign lands or using foreign ships to carry Venetian goods. Yet all of these measures taken to encourage production of ships at home seemed ineffective at reviving the local industry.

Freight prices began to drop considerably due to foreign competitors picking up lost Venetian trade, which continued to grow more severe. Near the turn of the sixteenth century, many competitors, including the Genoese and Ragusans, controlled a considerable share of Venice’s wine trade from Crete to England. Even the Portuguese, Spanish and English, whose competition in the Mediterranean was previously unseen up to this point, took control of shares of this trade. This became a serious threat to Venice. This long-distance trade was the driving motivation for the construction of the very largest round ships in the Venetian fleet, and the Venetian military was dependent upon these shipos during times of war. The stagnation of the industry forced the state to place a foreign export tax on wine from Crete and constructed 10 of these ships on its own during the last quarter of the fifteenth century to meet the rising naval power of the Ottoman Empire in the east. This brought the round ship fleet up to 25 right before the inevitable war with the Turks broke out in 1499. At the wars end in 1503, the fleet was back down to a meager 16 large round ships.

In 1502, Venice found a method to finally revitalize the shipbuilding industry by securing minimum freight rates to be received by Venetian shippers. Additionally, the state paid subsidies to shipbuilders during the five year period between 1502 and 1507. This sparked a rapid increase in shipbuilding, which managed to supply ships in quantities that met the demands of Venetian shippers clear until 1570. At this point, after a spell of positive growth, the fleet was more than twice its size at the start of the century: it consisted of 40 ships carrying over 240 tons, totaling 18,000 tons in shipping capacity. However, this is not to say that the issue of limited timber supply was resolved. Essentially, the subsidies to shipbuilders in the early 1500s allowed Venice to recover its lost shares of trade. With its trade recaptured, profits returned to Venetian merchants and the merchants began to demand more ships. Thus, given that foreign building and the importation of foreign ships was banned, incentive for investment in the local construction of round ships returned, and construction continued. The groves on the outskirts of Venetian territory continued to be depleted as a result, and by 1559 the senate banned the use of Venetian oak to build merchant ships, in attempt to ration timber for military needs. Yet construction, using foreign timber, still continued.

However, by this point, the Venetian shipping industry was in an extremely unstable position: the cost of ship construction in Venice was entirely dependent on the availability of foreign timber. Thus, Venice was essentially at the mercy of its competitors. As we will see, when competition greatly increased in the Mediterranean in the later years of the sixteenth century, Venice’s shipping industry fell into sharp decline. Furthermore, unlike the Venetian shipping crisis in the late 1400s, the scarcity of timber was a problem affecting much of the Mediterranean by the late 1500s. As a result, all of Italy would come to experience this decline in shipping industry.

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63 Lane, Maritime Republic. p. 378-381.
64 Pagano de Divittis, English Merchants, p. 39.
65 Lane, Venetian Shipping during the Commercial Revolution, p. 9-10.
66 Lane, Maritime Republic. p. 380-381.
2.6 Investment Structure of Italian Shipping Industries

Before turning directly to the demise of the Italian shipping industries foreshadowed above, we will briefly examine some other characteristics of the Italian republics that very well may have diverted their attention away from transoceanic trade. We begin here by considering the investment structure and organization of Italian shipping industries.

The republics of Venice and Genoa were organized in such a fashion that did not provide incentive for investment in oceanic exploration under the flag of the republic. Oceanic exploration was primarily undertaken by the monarchies of Spain and Portugal. Hence funding for these voyages was provided by the crown, which also bore the risk of these voyages. The risk for a country was quite low; the acquisition of new lands and resources more than made up for the instances when explorers returned empty handed in the long-run. Yet for a short-lived individual investor to bare such a risk, without the support of the military to seize land and establish trading links, made little sense. Such investments made even less sense when considering the numerous opportunities for profitable, low risk investments that existed in the Italian republics of Venice and Genoa.

The structure of Venetian commerce emphasized individual investment. Instead of a monarchy, Venice was governed by a republic which established institutions that both aimed to provide equality across merchants and include concerns of the world of commerce in the decision making process of the state.67 Under this regime, investment decisions in the shipping industry were left to individual merchants. It was the merchant’s prerogative to rent a ship, either from the state or a private shipwright, and from there arm and freight the ship for its voyage. The merchant thus took on both the risk and the profits from such an endeavor.68 Profits on typical voyages to the Levant during normal circumstances are well documented and substantial. For instance, a merchant’s diary from 1561 reports that he was able to sell cargos that bought for 56 ducats in Alexandria for 97 ducats in Venice, which he calculated would leave him with a profit of 266 ducats.69 Furthermore, shipping insurance had been well institutionalized in Venice by the 1400s.70 This provided financial security for merchants undertaking regular voyages for which the risk was assessable. A journey into the unknown, however, would have to give up this security. Hence, given the Venetian control of readily accessible and profitable trading connections, little incentive existed for an individual merchant to rent a ship and send it on a voyage of great uncertainty. The expected returns were sure to be much lower than a secure investment in a voyage to the Levant, if not negative.

Furthermore, given a great degree of equality across merchants in Venice, there was no source of wealth among the merchant community deep enough to privately bear such a risk. Nor did the state have the unchecked ability to allocate capital towards such projects. Rather than placing the wealth of the state under the control of a monarch, the institutions of the republic supported private banking and finance, to which the wealth of the nobility was diverted.71 A considerable deal of decisive power over merchant fleets and available capital, which did not exist under the Venetian republic regime, seems necessary to have initiated such risky ventures.

The structure of Genoese commerce was slightly different from that of Venice, but still did not create incentive for investment in risky voyages overseas. Genoese wealth was essentially concentrated among a relatively few wealthy families, which were the creators of Genoa’s powerful banking houses of the sixteenth and seven-

67 Van der Wee, European Long-Distance Trade, p. 22.
68 Lane, Venetian Ships, p. 14.
69 Lane, Mediterranean Spice Trade, p. 49-50.
71 Pullan, Crisis and Change in the Venetian Economy, p. 3.
teenth centuries. Unlike Venetians, who were in fact restricted to some degree by the senate from investing in foreign commerce, the Genoese financed foreign ventures liberally. Initially large sums of money went towards Portuguese exploration until the early 1500s when Genoa shifted its financial ties towards Spain. In regards to Genoese finance of the Spanish crown, Pike states that substantial trade with the New World would have been infeasible without outside financial aid, which came primarily from Genoa.

Yet these private investors in Genoa, although some in control of considerably more capital, faced the same constraints towards oceanic exploration as the Venetians. These wealthy families were not able to commandeering control of the state’s navy, necessary for establishing new trading networks. It was up to the state to initiate such projects, which did not occur due to the naval fleet’s allocation towards protecting Genoa’s position in the Mediterranean. On the other hand, such projects were initiated under the decisive power of the Iberian monarchs, and hence it was these projects that attracted Genoese capital.

3 Piracy in the Mediterranean

We will now briefly consider yet another proposed blockade to Italian access to the Atlantic: piracy. It is evident that piracy had a significant impact on Italian shipping. Merchant fleets were essentially designed specifically around this central problem plaguing Mediterranean commerce, as galleys and defensible ships became imperative methods of transport. Yet in the early period of Italian shipping, until the mid-1500s, the issue of pirates, although central and costly, seemed to be under control. The method of defensible convoys comprised of either merchant galleys or round ships with military galley supervision were capable of warding off the worst of pirate fleets. Several examples of this are presented in Lane (1934) and Lane (1973). For instance, in 1497 Venetian galleys were able to thwart the sacking of a Venetian round ship in the Bay of Tunis by a fleet of Biscayan pirates. Again in 1517, the Venetian military galley fleet was able to reach Syracuse in time to scatter surprise attack of a merchant fleet en route to deliver precious gifts to the Ottoman sultan. Further evidence that this problem of pirates was essentially under control in the early 1500s can be seen by the disbanding of Venice’s pirate patrol fleet during this time. This fleet, which was comprised of some of Venice’s largest ships, was dedicated to the sole purpose of hunting and eliminating pirates. Given the presence of substantial trade by Italian fleets in the Atlantic at this time by both galley and round ship convoys suggests that pirates were not a significant threat to blockade of Italy’s access to the Atlantic.

However, over time, the existence of pirates began to have more pronounced negative effects on Italian trade. At first the effects were indirect. Venetian bankers controlled the lucrative transport of African gold to Venice, which carried gold from Tunis after it traveled across the Sahara. However, political tensions rooted in piracy caused both the Ottoman and Spanish navies to attack Tunis. By 1533 the siege on Tunis forced Venetians to withdraw from this trade.

By the end of the sixteenth century, the effects of piracy in the Mediterranean directly hindered Venetian trade,

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72 Van der Wee, European Long-Distance Trade, p. 22.
73 Lane, Maritime Republic, p. 380.
75 Pike, Enterprise and Adventure, p. 9.
76 Lane, Venetian Ships, p. 49.
77 Lane, Maritime Republic, p. 350.
78 Lane, Venetian Ships, p. 49.
79 Lane, Maritime Republic, p. 350.
and did in fact pose a significant barrier towards access to the Atlantic. The rise of the piracy problem in the late 1500s can be traced back to the rampant rise of privateering while war waged between the English, Spanish, French and Dutch before the close of the century. While these countries were at war and their commercial systems in disarray, some of their merchants began private shipping enterprises placing personal profit over the well-being of their nation. When peace and order returned in the early 1600s, these privateers were ostracized due to their lack of loyalty to their respective nations during the strife. From Western Europe, they relocated in north-western Africa along the Barbary Coast, operating among the already established Moorish corsairs. Crucially, the privateers brought with them the latest technology in fighting ships from Western Europe, and the Moorish captains adopted these new techniques.\footnote{Davis, Rise of English Shipping, p. 127.}

The consequences of this were readily apparent: it is estimated that by 1618 the naval power of the Barbary corsairs surpassed all other Mediterranean naval powers combined. Even the English, who by this time had considerable stake in Mediterranean trade, could not contain them. Attempts by the English at controlling the piracy, beginning in 1621 under Charles I, failed miserably at first. It was not until 1655, under the rule of Blake, that the English navy could sufficiently attack the corsairs and force them to grant immunity to English ships.\footnote{Ibid., p. 128-131.} Given the great disparity between the naval strength of the English and that of any particular Italian navy in the early 1600s, this suggests that there was no chance for Italians to stand up to this force.\footnote{Kirk, Genoa and the Sea, p. 14.}

This indeed was the case. Venice pleaded to the Ottoman sultan on several occasions, asking him to force the Barbary corsairs, which were in theory under the sultan’s authority, to acknowledge a peace treaty with Venetian commercial ships. However, the corsairs found ways around respecting such a treaty, only allowing peaceful commerce for those states that could commandeer a treaty with them directly, like the English. As a result, Venetians were forced to abandon any maritime trade towards the west, including destinations both in the Atlantic and the western Mediterranean, after the first quarter of the seventeenth century.\footnote{Lane, Maritime Republic, p. 408.} As impeding as the piracy problem appears in regards to Italy’s direct access to Atlantic trade, we will see that it was in fact an afterthought by this point. The prospects of long-distance trade were already slim by the time piracy became rampant enough to end western voyages.

## 4 External Political Constraints

Now let us turn to yet another proposed factor affecting Italy’s access to the Atlantic and discuss the limitations of external political constraints. That is, how did the relation between Italian republics and the surrounding states of the Mediterranean and Europe restrict the extent Italian commerce from reaching a global status? For the case of Genoa, political constraints had a direct and limiting effect. In the case of Venice, political constraints on Venetian trade played a more subtle role.

Genoa came under partial foreign rule several times throughout its history. The first instance occurred in 1396 when the Doge put the city under partial French rule to help retain its territory and ward off threats from neighboring states. The state was passed around from foreign leader to foreign leader throughout the 1400s as the political climate in Northern Italy and France changed, always in an effort to protect the Genoese territory from potential attack. In 1499 Genoa fell into the hands of Louis XII of France. The city was offered limited sovereignty, which
enabled the city to exercise its commercial will as long as it was in line with French interests. However a revolt in Genoa from 1506-1507 lead Louis XII to take the city with force and revoke the state’s sovereignty. When Genoa traded hands from French rule to Habsburg rule in 1522, the lack of sovereignty remained for another 5 years.\textsuperscript{84} In this instance we see the power of Genoa’s external political constraints. For 20 years the state was at the will of French rulers; the autonomous choice of the Genoese government to institute long-distance trade was revoked.

In 1528 Genoa regained limited sovereignty and protection by falling under partial rule of Charles V of Spain, to whom the Genoese were forced to remain loyal.\textsuperscript{85} This had significant effects on the organization of Genoese maritime commerce, even at the local level. A considerable amount of the state’s merchant convoys were put to use under the Spanish crown. For instance, Genoese round ships took on a great deal of the responsibility of collecting goods from the Mediterranean and Northern Europe which were in turn freighted on Spanish ships destined for the Americas.\textsuperscript{86} Additionally, Genoese galleys were a symbol of the states loyalty to the crown, as they were put to use in the high-profile shipping of gold bullion from Spain to Genoa. From there the gold would safely move overland to Flanders to settle trade balances, or stay in Genoa as repayment for loans. Such cautious transport of gold was warranted after the Spanish silver fleet was sacked by the English in 1568 as it made its way to Flanders.\textsuperscript{87} It should be noted that Genoa was allowed to retain its profits for its work for the Spanish crown, and the profits were indeed substantial, especially those obtained through control of bullion transport. These profits, though, were in exchange for full political sovereignty. Under partial Spanish rule, any actions on behalf of the Genoese detrimental to the crown were not tolerated. Hence this political allegiance blocked Genoa from competing with Spain in long-distance trade. However, the protection and profits Spain provided Genoa gave the Genoese little incentive to challenge this restriction.

Political constraints on Venice, however, were far less restrictive as those placed on Genoa. We will consider the political ties between Venice, Egypt and the Ottoman Turks. The relationship between Venice and the Mamluk sultan of Egypt was a critical component of Venetian supremacy of the spice trade in the Levant. Beginning around 1360, instability within the Ottoman empire often blocked overland routes carrying spices to the Levant. This comparatively crippled Genoa’s participation in the Levant spice trade, as their merchant colonies were dependent on Ottoman overland routes. Venice, however, had a strong merchant colony established in Alexandria and was able to gain significant control over the spice trade through their relatively exclusive relationship with the Egyptian sultan.\textsuperscript{88} This relation was vital to Venetian control of spice profits, however it proved tenuous and difficult to maintain. The Turks threatened this relation as they attempted to take over Egypt following the death of the Mamluk sultan in 1496. This resulted in war between Venice and the Turks from 1499 to 1503.\textsuperscript{89} During this period, Venice diverted resources away from commerce to support the war. Doing so lost Venice a significant share of trade between Crete and the West, as discussed earlier, which took Venice considerable effort to recapture. At the war’s end, the Venetian shipping depression led to a dispute over prices of pepper between Egypt and Venice which severed their relation from 1505 to 1514. Venetian spice trade at this time hit impressive lows. When shipping resumed, trade volumes were only around a quarter of what they had been in 1505.\textsuperscript{90} Adding to Venice’s troubles, the Turks took control of Egypt in 1517, finally ending a highly beneficial relation between

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\textsuperscript{84} Kirk, Genoa and the Sea, p. 14-18.
\textsuperscript{85} Ibid., p. 19.
\textsuperscript{86} Pike, Enterprise and Adventure, p. 11.
\textsuperscript{87} Kirk, Genoa and the Sea, p. 44.
\textsuperscript{88} Ibid., p. 12.
\textsuperscript{89} Van der Wee, European Long-Distance Trade, p. 29.
\textsuperscript{90} Lane, Venetian Shipping during the Commercial Revolution, p. 10-14.
Venice and the Mamluks. However, trade began to pick up again in Alexandria during Ottoman rule. Yet another war between Venice and the Ottoman Turks in 1537 again led to outside competition carving out a share of this trade. French merchants from Marseilles and German merchants operating out of Ragusa were granted direct sailing rights to the Levant during the war between 1537 and 1540. These trade relations lasted well after the war, but by the mid-1500s Venice was again the privileged leader in the Levant spice trade, concentrated primarily in Alexandria.

How do these episodes strictly involving the Levant relate to restrictions on Venetian access to the Atlantic? These events show that the control of trading links in the Mediterranean was tenuous and stable political relations were necessary for control to be sustained. We see that whenever Venice diverted complete attention away from commercial activity in the Levant, to fight wars for instance, it immediately faced competition infringing on the state’s profitable trade. For Venice to maintain its position of supremacy and privileged relationship in Alexandria with the Egyptians and Turks, it had to provide the necessary amount of ships to adequately transport the supply of Asian goods flowing into the city for re-export. When that demand for ships was not met, rights to the Egyptian port were signed to foreign competitors. Given that Alexandria was the greatest artery of spices into the Levant and that the spice trade was the most profitable for Venice, it was natural that Venice would aim to retain this control. In light of the constraints on ship supply in Venice due to timber shortages, Venice did not have excess ships to devote to new trades out in the Atlantic. To take on new trades, Venice would have had to reallocate ships from the Levant and risk giving up its privileged status. As profits from Alexandria were visible to Venetian merchants, maintaining this safe trade made much more sense than forfeiting it in exchange for highly uncertain ventures far out into the Atlantic.

5 Decline of Italain Shipping Industries and the Loss of Access to the Atlantic

In this section I will finally discuss the events leading up to Italys ultimate barricade from the Atlantic during the period in which transoceanic trade attained a significant status among the Atlantic coastal nations of Western Europe, highlighting how limitations addressed above brought about such an end. The major hindrance to long distance trade that Italy faced was the depressed state of the its shipping industry in the late 1500s, as it was no longer able to compete with foreign shipping enterprises in the Mediterranean. In fact, this became a hindrance not only to long distance trade, but Italian maritime trade in general. Such a decline in the shipping industry resulted in a shift of capital away from shipping into more productive sectors and a general weakening of Italys position in the world of commerce. Crucially, this downturn in the industry began before the time in which transoceanic trade was unambiguously profitable for those Western European nations that participated in it, which came well after the discovery of the Cape Route or the New World. Thus in some sense we can consider this barricade from the Atlantic as exogenous from the development of Western Europe due to Atlantic trade: by the time Italian merchants may have rationalized the long voyage across the oceans, their industry was in no shape to stand up to the competition of the superior fleets of Western European.

Although Italy accumulated a great deal of wealth from its monopoly over the re-export trade of Asian goods to the rest of Europe, the discovery of the Cape Route did not initially provide sufficient incentive for Italy to divert attention away from the Mediterranean. The seemingly immediate effect of the opening of the Cape Route on the

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91 Van der Wee, European Long-Distance Trade, p. 29.
92 Glamann, European Trade, p.480.
93 Lane, Mediterranean Spice Trade, p. 54.
volume of spices shipped by Venice from the Levant may seem contrary to my claim. In the years leading up to the turn of the sixteenth century, Venetian galleys brought an average of 3,500,000 tons of spices to Europe each year. Of this amount, roughly 40 to 50 percent was pepper. However, between 1502 and 1505 when Portugal first began importing spices directly from the Indian Ocean to Europe, Venice imported less than one million tons per year. On the other hand, Portugal was importing an average of 2,300,000 tons per year to Europe during these years, nearly all of which was pepper.footnote{Lane, Venetian Shipping during the Commercial Revolution, p. 13.}

Furthermore, the introduction of Portuguese pepper into the European market led to a dramatic fall in pepper prices at the expense of the Italians, who traditionally sold a more dear and expensive variety of pepper.footnote{94}

Yet there were several justifiable reasons that Italian interests remained in the Mediterranean after their monopoly was broken and such seemingly fierce competition became apparent. We must keep in mind that the advent of Portuguese participation in the spice trade coincided with both a depression in Venetian shipping and political disputes in Egypt that limited the supply of spice available for Venetian re-export, as discussed above. In that light, the volume of spices brought to Europe by the Venetians may have very well been below average regardless of Portugal’s entry into the market. More importantly, the depressed state of the shipping industry made it infeasible for Venetians to take on competitive trade in the Indian Ocean. Recall the general lack of supply of round ships at this time, and the galleys inability to take on such long-distance trade. The Venetian senate struggled just to motivate the recapture of local trade lost during the shipping crisis and the war with the Ottoman Turks; an immediate shift towards oceanic trade was simply too daunting given the meager levels of investment directed toward the shipping industry in the first few years of the sixteenth century.

Also worth mentioning is the fact that the Portuguese only affected the spice market, and within the spice market, most of their attention was placed on pepper. This focus on pepper importation can be seen above when it was noted that nearly all of Portugals 2.3 million pounds of spice imports was pepper. Yet prior to the opening of the Cape Route, to satiate the European markets demand for spices, Venice typically imported somewhere between 175,000 and 2,100,000 tons of non-pepper spices per year.footnote{95} Thus we see evidence of a reduced capacity in Venice’s ability to import spice regardless of Portugal’s presence in the market. Surely excess demand existed in Europe for non-pepper spices given their supply was abruptly halved in the first years of the 1500s. Yet Venice was unable to meet this demand, as they imported less than a million pounds of spice in total during this time. Furthermore, Portuguese focus on spice trade left for the Italians a wealth of trades in the Levant not infringed upon by Portuguese activity in the Indian ocean. Glamann states that “trade conditions in the Levant facilitated a greater reciprocity of commodities that was possible in the overseas trade around the cape.”footnote{96} Indeed the movement of goods such as fabrics, drugs, textiles, copper, and of course, non-pepper spices, gave incentive for Italians to remain focused on preserving their commercial networks in the Mediterranean.

Italy’s retention of control over Mediterranean trade proved to be beneficial once fleets and supply channels in the Levant were sufficiently restored. Italian efforts to again dominate European re-export markets were slow to take effect, but eventually successful. Portugal indisputably held this dominance until the 1530s and while in control shifted the central re-export market from Italy to Flanders. Yet as early as 1518, shortly after stability returned to the relation between Venice and Egypt, Venetian merchants began carving out a share of the market in Flanders. Again in 1525, the year after Venice finally lifted the last lingering mandates on the use of galleys and allowed the

footnote{94}Glamann, European Trade, p. 479.
footnote{95}These numbers come from the fact that on average Venice imported a total of 3,500,000 tons of spice, of which 40 to 50 percent was pepper.
footnote{96}Glamann, European Trade, p. 478.
use of round ships for spice trade, Italian spices came to dominate the French and Lyon markets.  

In 1548 Venetian spices were again so prominent throughout Europe that Portugal closed its spice market in Antwerp. This trend of Italians regaining control of lost markets throughout Europe continued well beyond mid-century. By the 1560s it was again Venice who was indisputably in control of the European spice market, as they were able to import annual volumes of spice comparable to those prior to Portugals entry into the market. As evidence supporting this fact that the overland spice channel attained superiority over the sea route, in 1563 Portugal negotiated with the Turks for permission to pass their spices overland through Egypt and on to the Mediterranean. However, permission was not granted.

Although the Mediterranean remained the more profitable channel for re-export trade to Europe clear until 1600, Italy’s central position in this trade had severely deteriorated by this time. The decline was sparked by a resurgence of the scarcity of shipbuilding supplies, namely strong timber, throughout the Italian maritime republics, as alluded to above. This time around, resource constraints first began to affect Genoa, starting in 1564. At this time, Genoa was unable to supply ships in sufficient quantity to meet the ports demand, and Ragusan ships began to pick up the excess trade. Ragusan shippers, contrastingly, benefited from their control of large oak forests in Gargano. This allowed them to pick up shares of Adriatic trade as well. The crushing blow, however, came between 1570 and 1577 when Venice simultaneously waged a costly war with Turkey and suffered an outbreak of the plague, reducing its population by a factor between one quarter to one third. Venice faced both a depleted fleet, as it was consumed in the war, and a lack of the necessary supply of labor and timber to rebuild.

In attempt to sustain their industry, Italians relied on the importation of timber. However, the only reliable source for imported timber was from the Dutch, who acquired timber from the Baltic and Scandinavia. At the demise of the Italians, this led to an enormous rise in the cost of ship building over the years following the 1570s. Table 4 shows the price of building a galley over time. It is important to note the upward trend on munitions prices as well as hull components, of which lumber made up the primary component. It was indeed the fact that price levels in general were rising in Italy at this time. But comparing these rises with other indicators of price levels, the price of grain and the wage of Venetian merchant journeymen and shipbuilders, shows that the rise in the cost of the hull, and hence of timber, was in fact disproportionate. Pullan notes that over this period the average wage of merchant journeymen and shipbuilders in Venice rose by only 45 and 60 percent respectively. Grain prices, on the other hand rose significantly in the latter years of the sixteenth century, but tended to deflate beginning in 1593. Further evidence that this rise in costs is not a mere statistical illusion is found in Venetian documents. One, from 1581, notes that due to a sharp incline in costs beginning in 1573, it was difficult to find investors willing to finance the construction of large ships. A second from early the 1600s complains that shipbuilding costs rose by a factor of 4, and as a result the only ships in the harbor were those of the Atlantic coastal nations.
TABLE 4
COST IN DUCATS FOR A GALLEY AT VARIOUS DATES

<table>
<thead>
<tr>
<th></th>
<th>1580</th>
<th>1600</th>
<th>1643</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Munitions and Arms</td>
<td>2000</td>
<td>2,666</td>
<td>4,287</td>
<td>114%</td>
</tr>
<tr>
<td>Hull</td>
<td>2,806</td>
<td>3,742</td>
<td>8,800</td>
<td>214%</td>
</tr>
</tbody>
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Facing such costs, Venice finally found it necessary in 1590 to retract its protectionist laws imposed during its shipping crisis a century earlier, one of which barred the purchase of foreign ships. The Genoese had already succumbed to this practice by mid-century, but did not rely on it heavily until 1570 and onward.\textsuperscript{108} In terms of building costs, this was the most effective way for Italians to add new ships to their fleets. Indeed the lifting of this law resulted in an immediate accumulation of foreign ships, especially Dutch ships in the case of Venice. By 1599, 15 large foreign ships had been purchased by Venetians. And by 1606 over half of the Venetian fleets was comprised of foreign vessels.\textsuperscript{109} Yet this was not enough to revive the industry in crisis. It turned out that the Italians were incapable of operating their foreign ships as well as the English or Dutch sailors who were accustomed to the ships. The ships took on a different design than Italian ships: more emphasis was placed on effective capturing of the wind. The lack of a thorough understanding of these foreign rigging designs and skilled sailors to operate them meant Italy was not only dependent on Northern Europe for its wood and ships, but would soon be dependent on them for sailors as well.

During the middle of the 1500s, Northern European ships very rarely sailed into the Mediterranean. However, the later quarter of that century gave the Dutch and English incentive to reverse this trend, and they did indeed act upon these incentives. Disruptions to the channels through which Asian goods reached these countries urged Northern European merchants to establish direct trading links with suppliers. This phenomenon first began in the Mediterranean, as the Venetian war with Turkey severely limited Venice’s ability to acquire and re-export goods from the Levant.\textsuperscript{110} Atlantic markets were disrupted as well. In 1585, the capture of Antwerp hindered Flanders role as an emporium for foreign goods. Additionally, the blockade of Lisbon in 1597 gave the English and Dutch further incentive to establish direct trading networks, both in the Mediterranean and the Indian Ocean, as well.\textsuperscript{111}

The presence of the Northern European ships in the Mediterranean had immediate consequences. As noted, the Dutch and English faced lower production costs for their ships and were able to operate in the Mediterranean more efficiently. Initially, in the late 1500s, merchants from the Atlantic coastal nations simply competed with the Italians, as managed to set up similar trading networks. They did not forcibly take over Italian trading links. But their superior efficiency and lower freight cost made itself immediately clear. Italian operated ships required a crew averaging one man for each 7 to 8 tons of cargo. Yet ships operated by the English required only one for each 4.5 to 5 tons.\textsuperscript{112} Additionally, insurance rates on English ships were substantially lower than those on Italian ships.\textsuperscript{113} Italian ships quickly became a minority even in their own ports.

This noticable inability to compete led to the diversion of Italian capital away from investments into their own shipping industries. This began for Genoa immediately after signs of their relative inefficiency in the 1560s. This decade saw the city’s wealthy withdrawing from the practice of owning ships. It was noted by contemporaries that profits from investing in foreign finance were much greater. And those ships still servicing Genoa were primarily

\textsuperscript{108}Ibid., p. 39.
\textsuperscript{109}Ibid., p. 38.
\textsuperscript{110}Ibid., p. 41.
\textsuperscript{111}Glamann, European Trade, p. 480.
\textsuperscript{112}Lane, Technology and Productivity, p. 239.
\textsuperscript{113}Lane, Maritime Republic, p. 386.
foreign ships only partially owned by the Genoese. A similar trend began in Venice during the later years of the 1500s, as nobility withdrew capital from the shipping industry and began investing in property on the mainland and in financial markets. A document from 1612 explicitly states that the wealthy investors of Venice no longer wanted any part in maritime trade.

The lack of incentive to reinvest in the shipping industry led not only to the capture of Italian trading links supplying Europe with Asian goods, but led to Italian dependence on foreign shipping just to service their own imports for consumption within Italy. Unlike the shipping crisis that struck Venice at the turn of the fifteenth century, the imposing competition in the Mediterranean restricted the redevelopment of the Italian fleets. The English, Dutch and French began taking over Italian commercial functions throughout the Mediterranean. By 1620, around the same time the state gave up its voyages to the west due to rampant piracy, Venice began hiring English ships to carry the state’s goods from Venetian colonies in the eastern Mediterranean back to Venice. This practice soon became regular, and escalated to the point that the English Levant company complained about having to take on so many voyages entirely unrelated to their native country.

As Italian fleets declined to a state of mere local importance, mainly operating to maintain sustenance for their populations, fleets of the powerful monarchies of Western Europe waged war in the Mediterranean, vying for supreme control of its still profitable trade. These rivalries motivated these countries to construct great naval fleets of unprecedented strength. At the same time, the Venetian ships that once commanded the Mediterranean, were “rotting at their moors.” By 1655, it was England who achieved supremacy over the French and Dutch in the Mediterranean, and their power was inflicted on the Italian states. Once their direct connection with the Mediterranean had been established, the English began exporting quantities of industrial exports, primarily textiles and fabrics, that were four times as large as previous quantities. This overstimulation of Italian industries and consequent oversupply of Italian goods in England led to a drop in Italian export prices that undermined Italian industrial sectors. At the same time England’s industries were expanding, and England began demanding raw materials from its Italian trading sources. As noted by Cipolla, “by the end of the seventeenth century Italy had become an economically backward and depressed area,...its economy had become primarily agrarian. The great change had come mainly between 1600 and 1670.”

The decline of Italy’s economic status in the 1600s was indeed a more complex transition than the one described above. However, this key reversal of the Italian maritime republics from prominent commercial centers to small ports feeding the expansion of Western Europe was in fact the source of Italys lost access to the Atlantic. The reversed status of Italian shipping industries and naval power limited any means to compete with the great English fleets that controlled the Mediterranean. And the English were committed to protecting this control of the Mediterranean, as seen by their involvement in costly wars with the Dutch and French to do just that. Furthermore, this trend began well before the significant expansion of the British and Dutch empires due to their take-over of Asian trade in the Indies, which did not occur until 1615 to 1617. Prior to this time, Italian investment was already diverted away from their shipping industries, and the English fleets that competed with the Italians in the Mediterranean were already sufficiently strong to mitigate any serious competitive threat put forward by the Italians. The expansion of Western European fleets after the wealth of transoceanic trade had been realized simply

\begin{enumerate}
\item Grendi, *La Repubblica Atristocratica*, p. 156.
\item Pagano de Divittis, *English Merchants*, p. 12.
\item Davis, *Rise of English Shipping*, p. 130.
\item Ibid., p. 132.
\item Cipolla, *Decline of Italy*, p. 178.
\item Davis, *Rise of English Shipping*, p. 133.
\end{enumerate}
reinforced the Italian decline that was already well underway.

6 Conclusion

Throughout, we have seen that direct blockades to Italian access to the Atlantic did not exist prior to the late 1500s. There was no entirely restrictive external force preventing Italians from transoceanic trade. Italian ships were capable of sailing in the Atlantic. Italians were able to build ships of the same par as Northern Europeans, with respect to technology. And their war fleets were capable of mitigating potential piracy problems. Instead, it was a set of incentives established both by the institutions of the republics and foreign political constraints that kept Italian merchants bound to the Mediterranean. The profitable trading networks controlled by Italian states, and the opportunities granted to private merchants by the republics to retain these profits kept merchants focused on preserving these channels of wealth. Additionally, political pressure from the Ottoman Turks and the Spanish added further pressure on Italian merchants to maintain their practices within the Mediterranean.

A restrictive force irrelevant to the incentives of Italian merchants, however, did finally come in the late 1500s. The supply constraint on timber deemed Italian shipping inefficient and costly compared to the abilities of Northern European fleets. Simultaneous events disrupting the effectiveness of Atlantic ports in regards to the distribution of Asian goods sent these Northern European fleets into the Mediterranean. When the Italian fleets went head to head with the English in the Mediterranean, all hope was lost. The English took control of Italian commercial operations that had been run by Italians for several centuries in a matter of years. Capital was diverted away from Italian shipping and the industry fell into decline. At this point, it was essentially impossible for any Italian fleet to stand up to the great navies of Western Europe.

In some sense, this ultimate blockade of Italian access to the Atlantic beginning in the seventeenth century justifies AJR’s implicit assumption that Italy’s potential for Atlantic trade was null. Yet there is still a slight timing issue. Their model, which accounted for years following 1500, aimed to have a time invariant measure of potential for Atlantic trade. As we have seen, prior to the late 1590s, Italians would have been capable to engage in Atlantic trade. Although there were deterrents to Italian merchants to entering into Atlantic trade and the success of a hypothetical Italian transoceanic voyage is entirely questionable, a real potential for such trade still did exist prior to 1590.

One final consideration I would like to make regards the importance of naval power in relation to trade during this era. What ultimately shaped each of the trading networks we have discussed was the strength of the trading state’s navy. First it was Genoa versus Venice vying for control over Mediterranean trade. Then it was Portugal’s naval strength that allowed them to take control in the Indies. It was also their subsequent naval decline in the later half of the 1500s that allowed the Mediterranean to regain strength in re-export trade and allowed the British and Dutch to take power in the Indian Ocean in the 1600s. Finally, it was the naval superiority of the British that ultimately confined Italian merchants to the Mediterranean. I believe Perotin-Dumon puts it best as he states “violence then was not a trait of piracy but more broadly of the commerce of that age. Commercial profits were linked pragmatically to considerations of war and aggression...”

In this light, Italy’s potential for Atlantic trade still seems to be endogenous to the mechanism connecting Atlantic trade and the growth of Western Europe. It was essentially the capability of Western European nations to form navies superior to those of the Italian republics that limited Italian efforts in Atlantic trade. As a result, it

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was this same naval superiority that drove the entire Italian economy into a depressed state beginning in the 1600s. It seems that a country’s ability to effectively build and command a powerful navy may have played a role in the development of Western Europe as crucial as the existence of non-absolutist institutions.

References


