



**Dipartimento di Economia Politica**



## **Materiali di discussione**

\\ 677 \\

**The new maritime trade world geography.  
Opportunities for Italy?**

Margherita Paradisi

January 2012

Graduate in International Management,  
Faculty of Economics “Marco Biagi”, University of Modena and Reggio  
Emilia, Italy  
e-mail: [margheparadisi@gmail.com](mailto:margheparadisi@gmail.com)  
mob: +39 333 9944024

**ISSN: 2039-1439 a stampa**  
**ISSN: 2039-1447 on line**



The new maritime trade world geography. Opportunities for Italy?

Margherita Paradisi\*

- \* Graduate in International Management, Faculty of Economics “Marco Biagi”, University of Modena and Reggio Emilia, Italy
- \* E-mail: margheparadisi@gmail.com, mob: +39 333 9944024

Paper presented at the Hamburg International Conference of Maritime Logistics and International Supply Chain Management - HICL 2011, 8-9 September 2011, organized by the Hamburg University of Technology (TUHH), Hamburg, Germany.

## **Abstract**

Nowadays, global trade flows are characterized by new economic trends and changes in the trading composition, the launch of mega-vessels, together with the new role of the Countries involved, are defining a new global geography for maritime transportation.

This paper seeks to understand which opportunities Italy can count on, in order to strengthen its role in the international trade flows and particularly in the Mediterranean basin.

**Keywords:** feeder port, Italy, giant full containers, maritime transport, port geography

**JEL- Classification:** L920, Railroads and Other Surface Transportation; R400 Transportation Systems: General

## **Acknowledgments**

I would like to thank Professor Dionisia Cazzaniga Francesetti from the University of Pisa and Professor Margherita Russo from the University of Modena and Reggio Emilia for their scientific contribution and highly stimulating suggestions.

I kindly thank the HICL 2011 paper reviewers and Dr. Hermann J. Klein, member of the Germanischer Lloyd of Hamburg, Germany; Professor Elen Twrdy from the University of Ljubljana, Slovenia; Hella Abidi Ph.D. from the Institute for Logistics & Service Management of Essen, Germany, for their positive comments on my presentation at the HICL2011 Convention.

## **1. Introduction**

This investigation is concerned with maritime trade and Italian ports role in international maritime network. The purpose of the paper is twofold. Firstly, the current situation and new happenings in European container trade are examined. Secondly, once the determinants of maritime trade setting are identified, two potential future scenario for Mediterranean trade geography are drawn by estimating a positive and a negative hypothesis with real data of container trade.

The structure of the paper is as follows: Section 2 presents the potential role that Italian ports could take in the past. Section 3 described the current European seaborne container trade's scenario, identifies the differences between North and South European ports and the consequences of the launch of the mega-vessels. Section 4 discusses two future scenario hypothesis for container trade in Mediterranean area. Finally, in Section 5 conclusions and Italian ports implications are drawn from the results.

## **2. Opportunities for Italy?**

### *2.1 Potential feeder role of Italian ports*

There are many reasons to state that Italy could have an important role in the global shipping network arena. First, the Country is located in an attractive geographical location in the very middle of Mediterranean and, in history, it has been considered the main door for the European market together with the Northern European ports and comparing them, Italy can count on a very objective advantage, that is a shorter time needed to reach it in trade flows particularly with Far East. Using Italian ports, a hub and feeder system, the transit time in the most important intercontinental trade routes, for instance, from/to China could decrease markedly. In an intermodal prospective, it is demonstrated that in the route Shanghai - Kiev, the transport service (ship plus train) can save 20% costs and 4.8 days passing through the port of Trieste, Italy, rather than the port of Hamburg, Germany (Cazzaniga Francesetti et. al., 2005, pag. 31).

Secondly, thanks to the extensive diffusion of Italian ports, the Country could focus on specialization in specific cargo flows (there are 42 commercial ports located over the 7.345 km cost territory, one every almost 170 km). The proximity of each port to regional industrial clusters, together with specific public policies, could help in gaining market share in specific cargo flows. From the hub and spoke system point of view, in the last period Italian ports cannot compete with other ports in the Mediterranean, because this area can count only on Gioia Tauro and Taranto as hub ports, while other ports present very aggressive competition, such as Port Said in Egypt, and the port of Tangeri in Morocco, which offer numerous advantages in terms of cost of labor, taxation, operational and infrastructural costs and cheaper security norms, or the important terminal of the port of Pireo in Greece, run by Chinese operators.

## 2.2 *What went wrong?*

For these multiple reasons, since now, Italian ports best strategy - except for the port of Gioia Tauro and Taranto - could focus on positioning themselves as feeder ports, regional gateways for secondary destinations. However, Italy was not able to take advantage of all this important conditions. The main reason is due to the wrong financing strategy made by the Government, that has invested on all the ports rather than deciding for a reasonable focused development strategy addressed to the biggest and most important ports. Moreover, the public strategy did not consider the necessary improvement of the inland connectivity for better and effective intermodal services. Even two Italian hub ports are well located on the main Mediterranean route between Suez and Gibraltar, such as Gioia Tauro and Taranto (with Contship and Evergreen terminals management respectively), because of load factor saturation and low efficiency in logistics, have been overcome by other ports in transshipment and container segments - although more distant and worst located. In spite of crisis, for instance the Spanish port of Valencia has carried out the amount of 4,132,000 TEUs in 2010 that is almost the total of most important Italian ports.

On the other side Italians performances have been driven by Cagliari hub, with +168.0 per cent in 2009 over 2008 with 825,000 TEUs. Low results for the

other ports of transshipment: -17.6 per cent over the previous year for Gioia Tauro in 2009 (2,857,438 TEUs) and 2,851,000 in 2010 and -5.7 per cent for Taranto (741.428 TEUs) in 2009 and 581,936 in 2010. Regarding other Italian regional gateways, no positive performances have been registered in 2009: in comparison with 2008, Genova has lost -13.2 per cent (1,533,627 TEUs), -16.1 for La Spezia (1,046,063 TEUs), -22.5 per cent for Savona-Vado (196,000 TEUs) and -24 per cent for Livorno (592.050 TEUs). Fortunately, the market recovery has brought Genova to 1,758,000 TEUs in 2010, La Spezia to 1,285,000 TEUs, Savona-Vado to 220,000 TEUs and Livorno to 635,270 in 2010 but it is still a very slow growth.

Anyway, this situation will no longer probably persist in the Mediterranean area. Very recent happenings are going to modify the global shipping sector and its network displacement.

### **3. European seaborne container trade**

#### *3.1 The most recent happenings*

Nowadays, global trade flows are characterized by new economic trends. Changes in the trading composition, together with the new role of the Countries involved, are defining a new global geography for maritime transportation. Moreover, the financial crises has played an important role in it. Even though the world economy has seen just a slight recovery, the total world trade flows are augmenting in 2011, mostly pushed by Far East markets. IMF, in fact, point out that the economic growth recorded in 2010 is going to fall in 2011 from 2.7 per cent to 2.2 per cent in developed countries and from 7.1 per cent to 6.4 per cent in developing ones.

Global trade flows are also affected by technological improvements, that are rapidly modifying the shipping market. The average ship capacity, for example, more than double every seven years in order to gain scale advantages; consequently, a few ports are no more competitive because of their short seabed or for lack of infrastructures. However, in very recent time, new happenings influenced the game rules again in the global shipping market, with distorting repercussions in the Mediterranean, too: the AP Moller-Maersk order of ten new

container ships with an unit capacity of 18,000 TEUs, North African disturbances and the Japan earthquake.

### The return of the Giants

The first news regards a further improvement in shipping technology: on the recent February 21, 2001, Daewoo Shipbuilding & Marine Engineering Co. (DSME) has confirmed that Moller-Maersk will issue an order against the value of 2,000 billion won (1.79 billion dollars) to build ten of the container unit capacity of 18,000 TEUs. DSME has stated that the contract includes an option for 20 more ships of the same type, which will be 400 meters long and 59 meters wide and 16 m draught and that will be delivered by 2014. As a dominant element in the supply chain, the launch of these mega-vessel is going to impact hardly the global industry, bringing changes in all the logistic process. Particularly, Maersk's aim is gaining market share in order to reduce the numbers of competitors increasing the market's entry barriers. Although a recovery is under way, the success of these ships will depend upon the ability of the company to attract the business to fill each "monster", and that of course depends to some extent on the vibrancy of the trade. But the main question regards on which routes these "giants" are going to operate. Vessels from 8,000 to 14,000TEU are confined to the Asia-Europe route and certain ports of call that have infrastructures and a deep enough depth to accommodate them. 18,000TEU vessels would require a deeper depth (almost 18 m at full load), so the number of ports they could call at would be restricted further. For example, the Italian port of Gioia Tauro, would be out of competition turning benefit to port of Tangier that is about 18 m. The entrance of the Maersk container super giant vessels in the market will challenge the ability of the main ports to handle such an increase of cargo in a single ship and to clear it without delay, and the arrangements necessary to shift the number of containers by road, rail and feedership. Moreover, also the yards amplitude would be challenged. Many problems would arise inside and outside the port infrastructure, such as technical gears adaptation, load factor and logistic chain adequacy because of these advanced ships will be furnished with load and unload very quick technologies for huge amount of boxes. Ports would need to be geared with appropriate cranes. For these reasons, the inflexibility of these huge ships,

constrained by their dimensions to a very limited range of ports (at least for the foreseeable future) will lead them to be used for few pendulum service (or round the world service). Moreover, logistics would need to improve in high quality in order to manage the distribution and delivery of 18.000 TEUs towards the other intermodal channels.

There are some major carriers which argue that the ability to deploy their ships interchangeably on a bigger range of routes makes smaller ships less of a gamble in today's volatile and uncertain world. Some recall the great leap in crude oil carrier size during the 1970s or the Gigantism phenomena, borne to supply raw materials to Europe and Japan during the post war reconstruction. Therefore, if Maersk's prediction about rise in containers traffic will manifest - reaching the 250 million TEUs world container trade forecasted by 2024 (or 150 million TEUs by 2014) - probably the giant ships will enjoy the sort of welcome that is reserved for truly eye-watering technological developments, which will reflect positively upon the shipping industry in general.

#### North African disturbances

Recently, the North Africa ports have improved significantly their position in the world shipping network and, in particular, they have become an important point of reference in the Mediterranean area. Their very competitive offer, their economic growth, together with their closeness to the Old Europe markets, has allow them to increase notably their market share and to be seen as very attractive from shipping companies from all around the world. Moreover, the global growth during the crises has been highly pushed by new emerging markets from North Africa: the raising of important trade flows and very competitive hub ports in this area have changed the main routes and players in the Mediterranean area. These trends have led the local countries to operate selectively towards investments in this strategic sector.

The Tanger-Med port, in Tangier, Morocco, is a explanatory example of these trends and it has become one of largest ports on the Mediterranean and in Africa by capacity in just three years. Its particular position on the Straits of Gibraltar, at the crossing of two major maritime routes and 15km from the European Union (in particular, from the rich West Europe) enable it to serve a

market of hundreds of millions of consumers through the industrial and commercial free zones at very competitive rates which is run by well-known private operators. Together with the generalized growth in all traffics, Tangier port is profiting by the strong growth in container transshipment's market and, becoming the leading hub for cereal transshipment - a facility which is non-existent in the North West African region at present - it has been a safe point of reference during rebellion in the other North African countries. The port is expected to reach full capacity by 2015, and to operate 8 million containers, 7 million passengers, 700.000 trucks, 2 million vehicles, and 10 million MT of oil products, upsetting significantly the port offer in the Mediterranean. Whereas the turmoils that are now arisen in the North Africa region could modify for a temporal period the preferential routes in all the Mediterranean basin. Thus, a new scenario is going to set up and for the moment no forecast can help maritime companies in choosing different terminals. Even though the hypothesis in which the upturn in North Africa's countries will be not solved in the short term would affect hardly the future of shipping in the Mediterranean and a new equilibrium in supply and demand could reveal itself.

#### Japan earthquake

Japan suffered a magnitude 8.9 earthquake on March 11, 2011. Before this calamity, the Port of Sendai - as a major distributor of goods for the Tohoku region - supported many regular routes for container ships within and outside of Japan. As one of northeast Japan's largest port complexes, the Port of Sendai is closer to North America and it was an excellent gateway for products moving through eastern Japan. Regular container shipping services extended to North America, China, Korea, and Southeast Asia. Container feeder services to Tokyo and Yokohama further increased the trade potential with Europe, the Middle East, Oceania, Africa, and South America. This situation can affect, somehow or other, Italian and Mediterranean ports in the short/medium term.

### *3.2 Current scenario in European seaborne container trade and port traffic*

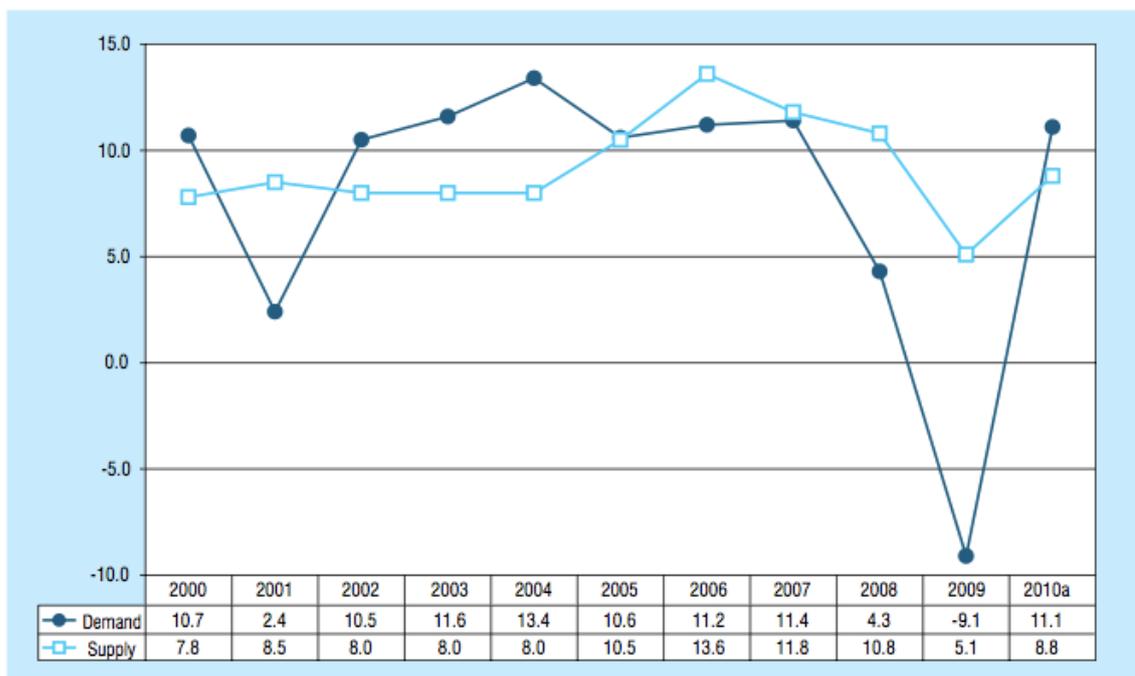
Despite the falling demand of container sector in 2009 container shipping is currently moving into more positive territory, with the global economic recovery

on the way and with a turn in the inventory replenishment cycle. By late 2009, positive signs were emerging with gradual growth in trade volumes being recorded across different trade lanes. By May 2010, several service upgrades and new services had been launched. While world container trade is forecast to increase by 11.5 per cent in 2010, in view of the large size of the ship order book and the slow pace of improvement, recovery remains fragile.

#### Differences between North Europe and South Europe ports

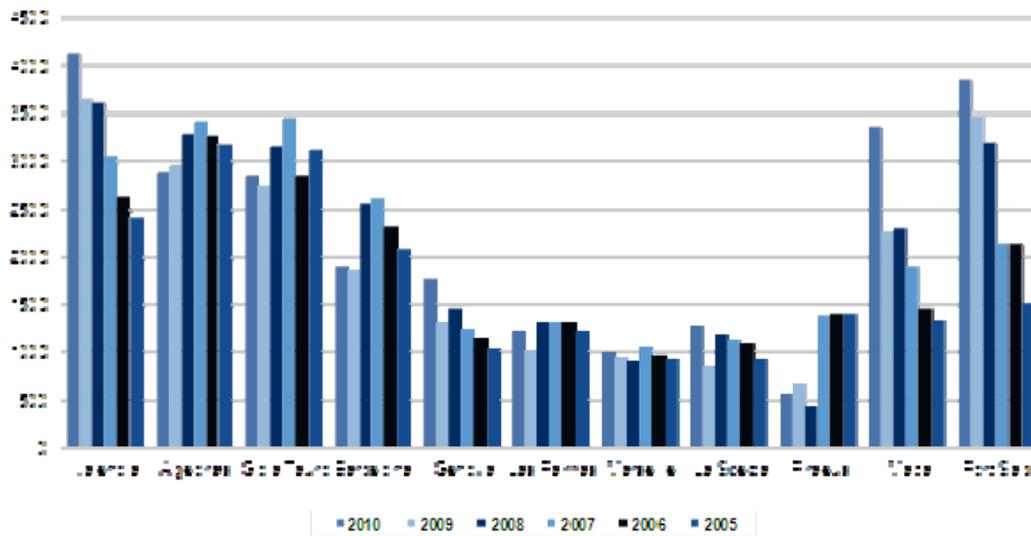
As can be seen from Figures 2 and 3, all the top-ranking European ports lost traffic during the crisis. Despite this catching up, the volume of traffic handled by the Central and East European ports is still far smaller than the traffic of the major West European ports.

**Fig. 1 Growth of demand and supply in container shipping, 2000-2010 (annual growth rates)**



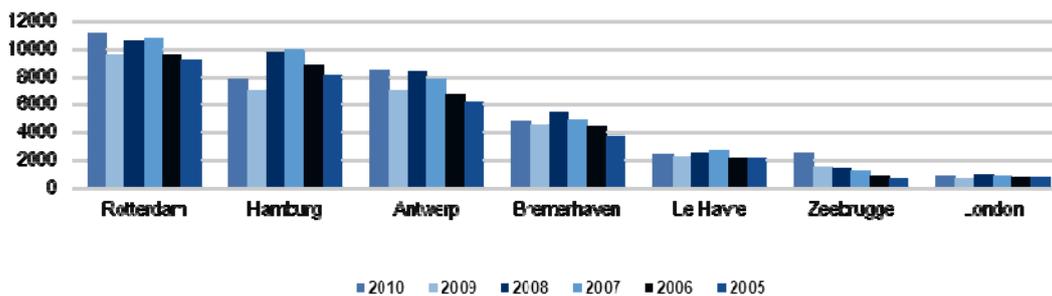
Source: Review of Maritime Transport 2010, Unctad, pp. 69

**Fig. 2 Volumes of container handled in main Mediterranean ports (1,000 TEUs)**



Source: my elaboration with Eurostat data, Top 20 main European port, 2010

**Fig. 3 Volumes of container handled in main Northern Range ports (1,000 TEUs)**



Source: my elaboration with Eurostat data, Top 20 main European port, 2010

### Container trade with Asia

CTS reported total cargo growth for the Asia to North Europe, west and Mediterranean regions during the peak season in the third quarter 2010 was up 3.9 per cent compared to the previous quarter with the west Mediterranean being the worst performer. A breakdown of the recorded cargo flow from Asia to North Europe in Q3 amounted to 2,359,612 TEUs, an increase of 6.6 per cent compared to the previous quarter. Asia to the West Mediterranean, including North Africa, totaled 638,665 TEUs, down 4.8 per cent from Q2. Asia to the East Mediterranean including the Black Sea, totaled 558,408 TEUs in Q3, a 3.5 per cent increase.

### Import and Export flows

A total of 5.47 million TEUs were imported across Europe in Q3 2010, which represent a 1.7 per cent increase over Q2 and an 11.8 per cent increase over

the same quarter of 2009. Of the total, 3.60 million TEUs were imported into North Europe and 1.87 million TEUs were imported into the Mediterranean and Black Sea region (a 3.1 per cent increase and 0.8 per cent decrease over Q2 respectively). The 1.72 millions TEUs imported in September 2010 was an 8.8 per cent decrease from August, which represent a 5.3 per cent increase over the same month of 2009. Imports to North Europe decrease by 7.8 per cent while imports to the Mediterranean and Black Sea region decreased by 10.6 per cent. The forecast for 2011 is for growth in each of the upcoming four quarters with the exception of Q4 2010. The estimated total import for 2010 is for 20.97 million imported TEUs, which would represent a 13.0 per cent increase over 2009. North Europe is forecast to import 13.80 million TEUs, an 11.6 per cent increase, while the Mediterranean and Black sea region is projected to increase by 15.9 per cent to 7.15 million TEUs.

On the other hand, a total of 3.88 million TEUs were exported across Europe in Q3, which represent a 2.3 per cent decrease from Q2 and 4.1 per cent increase over the same quarter of 2009. Of the total, 2.54 million TEUs were exported from North Europe and 1.34 million TEUs were exported from the Mediterranean and Balck Sea region (a 1.9 per cent and 3.2 per cent decrease from Q2 respectively). The 1.25 million TEUs exported in September was a 4.4 per cent decrease from August, which represent a half per cent increase from the same month of 2009. Exports from North Europe decreased by 1.5 per cent while exports from the Mediterranean and Black Sea region decreased by 9.8 per cent.

Total export for 2010 are forecast to increase by eight per cent to 15.31 million TEUs, with North Europe decreasing by one per cent (to 10.12 million TEUs) and the Mediterranean and Black Sea increasing to 5.19 million TEUs.

#### **4. Two scenario hypothesis for the future**

##### *4.1 External elements affecting seaborne container trade in Mediterranean area*

According to the October 2010 update of IMF's World Economic Outlook, international trade volumes will continue to increase with the recovery, but we should not expect to see the same rapid growth that has been experienced in 2010.

It must also be remembered that the growth seen in 2010 is measured against the trough of trading volumes in 2009, which severely distorts the statistical analysis. As the economy improves through the beginning and middle of 2010, total world trade will grow 8.9% in 2010, 6.9% in 2011, and 6.7% in 2012. This trend will reflect over the international seaborne trade and, focusing on container market, many hypothetical scenarios will be drawn.

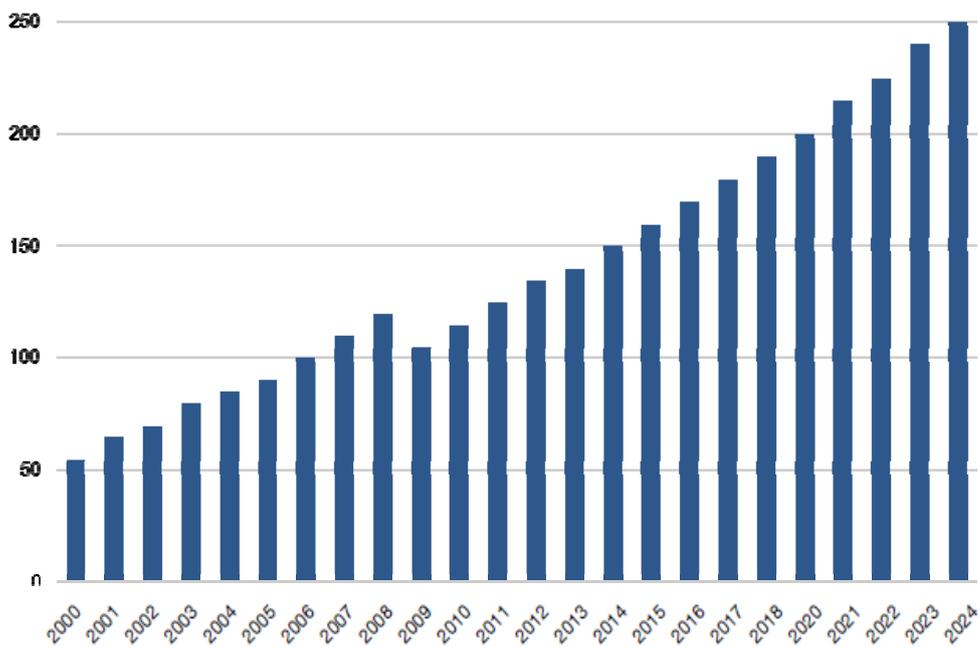
#### 4.2 Two hypothesis

The uncertainty regarding the political situation in North Africa, the Japan heartquake and the advent of the super giants vessels promise to shape new scenarios that can be surprisingly different, with evident effects for the Mediterranean area.

Considering as a given element that Maersk will introduce the mega-vessels in its fleet and supposing both a significant increase in the containers market over the next three years (Fig. 4) and the adaptation of logistics in the handling process according with the new needs, the containers market would change remarkably.

The situation in the Mediterranean could evolve in the following ways.

**Figure 4: World container trade up to 2024 (in mill. TEU)**



Source: IHS Global Insight, World Trade Service

### Negative hypothesis

The introduction of 18,000 TEUs vessels by Maersk will cause an immediate market contraction for ports that do not have a deep enough depth to accommodate 18,000 TEUs vessels and that, for many reasons (such as lack in yard space or in intermodal linkages, etc) cannot provide appropriate logistic services. For this reason, all the ports with a significant market share in container flows, will be hardly threatened. On the other hand, ports able to call 18,000 TEUs vessels will be privileged and Maersk will plan its routes in service/price ratio terms. At the moment, the Tanger-Med port, in Tangier can offer the most competitive prices, together with suitable infrastructures in the Mediterranean. The Pireus port, in Greece, enjoys a good location in the Mediterranean, especially for East trade flows (but it cannot compete with Tangier's closeness to the rich West European and the emergent North Africa markets). Moreover, the ports of Port Said and Gioia Tauro could be attractive for not full loaded 18,000 TEUs vessels coming from Far East routes (supposing, for example, they have already stopped in a hub in Arabic countries or somewhere else, and consequently not very high depth is needed - whereas they would need ad hoc cranes, wide evolution dock, etc).

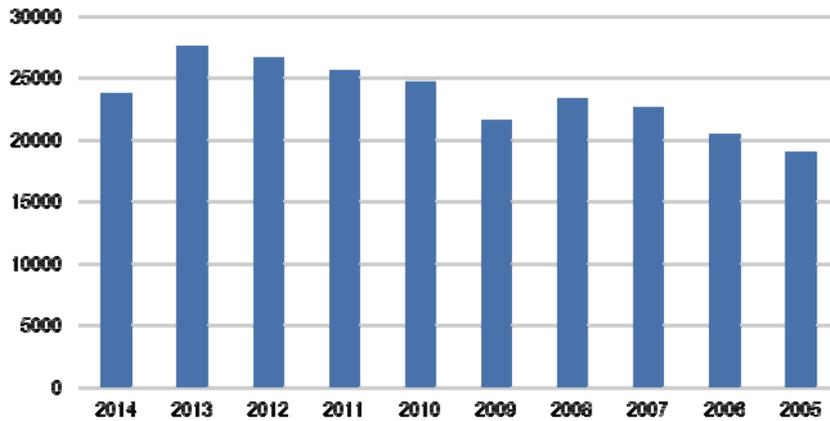
Anyway, the situation should change for the worst with a lesser growth in North African markets and in West Mediterranean area: especially, container market in this zone will fall sharply if North African disturbances do not stop. In this case an hub can be superfluous and, consequently, Rotterdam will become the main hub in European market. In fact, if we consider only European countries, 18,000 TEUs ships can just fit in Rotterdam, in the EECV terminal (24 m depth).

After this remarks, the Mediterranean area would be shut out from big fullcontainer vessels and only suited for inner basin traffics. The ro-ro type of cargo will become the most used in the area, together will small full container ships.

In this hypothesis, goods from/to the Mediterranean countries will be mainly handled by North European hubs, with logistic links towards/from South Europe.

The following graph shows container trade growth forecasts in Mediterranean until 2014 under this negative hypothesis.

**Fig. 5 Negative hypothesis: Container trade growth in Mediterranean ports (x 1000 TEUs)**



Source: my elaboration with Eurostat data, Top 20 main European port, 2010

Note: Including ports of Valencia, Algeciras, Gioia Tauro, Barcelona, Genova, Las Palmas, Gran Canaria, Marseille, La Spezia, Piraeus, Malta Freeport (Marsaxlokk Harbour), Port Said; 2011-2014 data are forecasted.

### Positive Hypothesis

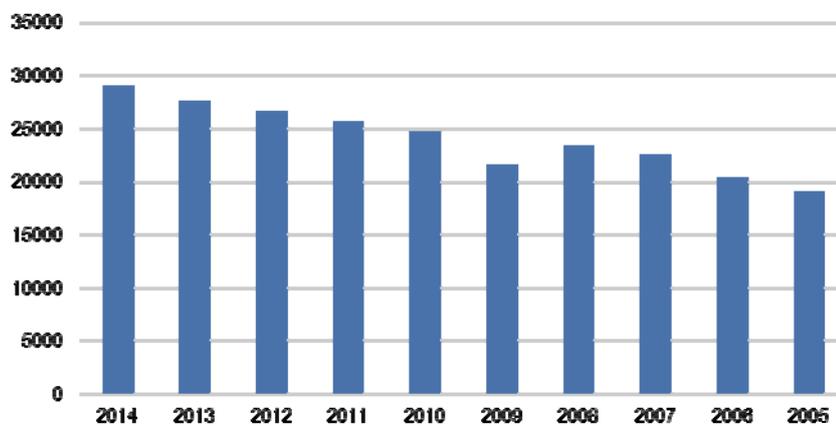
Forecasts have shown confidence in a total recovery of the shipping market over the next 5 years, with reference to container market too (that can be seen in the Maersk decision to order ten 18,000TEUs vessels). Consequently, a similar growth is also expected in the Mediterranean countries. In this scenario, 18,000 TEUs vessels will prosper and they will surely concentrate traffics in ports with suitable seabed, such as Tangier - for the South European area - and Rotterdam - for the North European one (or maybe others ports in case of dredging up operations or at ship's not full load conditions).

Focusing on the Mediterranean, with super-giant vessels called by just one hub in the area, the logistic system will need a filling feeder service, implemented with fullcontainer ships and ro-ro vessels. The market will privilege ports with better goods' offer and service.

As a support of this positive expectation, we can underline that Maersk is now organizing a feeder company in the Mediterranean, called Seago Line, that is now recruiting in Italy, too. Naturally, the other shipping companies will respond

with full load 15,000 TEUs vessels or partially unloaded containerships that can fit in other hubs. Consequently, the competing oligopoly phenomena will probably accentuate inside this market: 18,000 TEUs vessels' goal will be to rotate over their own route as rapidly as possible and a hard fighting situation will surely start between shipping companies. This is confirmed by the rise of new buildings orders for container ships, as more and more companies are trying to prepare themselves for the expected rise of global container trade, especially from 2013 onwards. After the Maersk's mega order for at least 10 Triple-Es, OOCL confirmed an order of \$816 million with Samsung for six ships of near 14,000 TEUs each and there have been a total of 17 firm container ships over 10,000 TEU ordered so far in March 2011 and if all options are declared for these firm orders, this will rise to 40 ships. According to this trend, the demand from the operators for the very large ships seems to remain firm - as the fight for market share and maximising economies of scale continues.

**Fig. 6. Positive hypothesis: Container trade growth in Mediterranean ports (x 1000 TEUs)**



Source: my elaboration with Eurostat data, Top 20 main European port, 2010

Note: Including ports of Valencia, Algeciras, Gioia Tauro, Barcelona, Genova, Las Palmas, Gran Canaria, Marseille, La Spezia, Piraeus, Malta Freeport (Marsaxlokk Harbour), Port Said; 2011-2014 datas are forecasted.

With liner companies seemingly focusing on the largest super post panamax ships, this hypothesis stands that the smaller feeders and new generation of post-panamax 3-7,000 TEU vessels market will continue to develop, with new buildings as well. Particularly, the trend will prosper in the Mediterranean area, of

non-historical container owners entering the sector and becoming tonnage providers for the lines, servicing the very important inter-regional and feeding trade. Finally, with the giant ships on the long haul routes, there will more than likely be a strong demand for shorter haul feeding off from the large container ports.

The Fig.6 reflects the situation that should developed in the Mediterranean container trade according the positive hypothesis that has been drawn.

## **5. Conclusions and further comments**

### *5.1 Italian ports' challenges*

The 24 Italian merchandise ports have increased their traffics by 14% in 2010, an insufficient level to reach pre-crisis performances and much lower than other North and South European ports. In addition to this worrying datas, the Italian ports' future development is undermined by lack in governance and long-term strategy planning, bringing the national logistic system towards an uncertain destiny. Besides, with the increasing trend in ship's capacity, Italian maritime system could suffer both in hub and feeder ports.

As can be seen from the Figure 2, the main Italian hub of Gioia Tauro, falling to 2,851,241 TEUs in 2010, has recorded a worst performance the most challenging and dramatic year in the history of container shipping: the 2009.

Anyway, in order to affirm their self, Italian maritime infrastructures must assure efficiency and efficacy with all subjects in port services and inland logistics. This is fundamental and always true in every scenario development. As it has been already said, Maersk project's fulfillment mostly deals with logistic adaptation process inside and outside ports.

### *5.2 Conclusions*

According to scenarios presented in this paper, in the negative hypothesis Italian ports, together with main ports of the Mediterranean, would be seen their forecast falling sharply, hardly penalized by competition with North European Range. On the other hand, in the positive hypothesis they could prosper, focusing

on feeder and ro-ro traffics. Italian ports mainly must strive for catching opportunities in the collateral markets, such as feeder and general cargo - that are already good developed - in order to become points of reference in these segments. In conclusions, the most probably situation in the near future for Italian ports will see an increase in ro-ro and general cargo flows, because the point to point general purpose is mostly served by ro-ro service, that is also used as feeder.

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