

The Suez Canal after the expansion

Analysis of the traffic, competitiveness indicators,
the challenges of the BRI and the role of the Free Zone

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EXECUTIVE SUMMARY

- ▶ **Traffic through Suez is growing** both in terms of number of ships and tons of goods.

- ▶ **Containerships** are the **most numerous vessels** that made full transits through the Suez Canal (5,568 on the total of 17,550). Thanks to the enlargement, in 2017 **the average size of transiting containerships grew by 21% on 2014** (year before the enlargement).

- ▶ **Transiting goods traffic** amounted to **909 million tons**, registering a **record growth** equal to **10.9%** on 2016. Southbound goods amounted to 478 million tons, increasing by 19.3%, while Northbound goods were 431 million tons (+2.9%).

- ▶ The Suez Canal, together with the 200-mile long SUMED Pipeline, are the **3rd transit route in the world for crude oil and refined products** with 5.5 million b/d (barrels per day). These two routes combined accounted for about **9% of the world's seaborne oil trade**.

- ▶ **LNG flows through the Suez Canal** in both directions were 1.2 trillion cubic feet (Tcf) amounting to **9% of total worldwide LNG trade**.

- ▶ Egypt's Shipping connectivity is on the growth, especially after the Suez Canal expansion. Some improvement in logistics is expected.

- ▶ Based on the LSCI (Liner Shipping Connectivity Index), Egypt has a **good transport connectivity**. In 2018, with an index of 70.3, Egypt ranked **18th** in the world (China holds the 1st position), **3rd** among the MENA countries and **2nd** among South Mediterranean countries.

- ▶ In 2004 (first available year) Egypt's LSCI was 42.9. It **increased** significantly after 2015 (Suez Canal expansion), from 61.5 to 70.3. The linear trend shows **1.5 points more** every year in Egypt's LSCI.

- ▶ Based on the LSBCI (Liner Shipping Bilateral Connectivity Index), **Egypt has the best maritime connections with Italy, Spain, France, China and Malaysia**. Among MENA countries, **Turkey** is the one with which Egypt has the highest LSBCI.

▶ In 2018, **Egypt** placed **67th** in the **LPI** global ranking and **9th** among the other MENA countries.

▶ The World Bank's Survey, **LPI domestic index**, shows that Egypt's operators, in general, have a **good assessment as for ports and airports** infrastructure and services, while their quality perception is lower for road and rail.

▶ **113 countries are somehow involved in the Chinese Belt & Road Initiative (BRI)**, almost 50 more than the countries that were originally part of the project. As of September 2017 China had already signed cooperation agreements with 74 countries. **The amount of financial resources devoted to the project are expected to reach \$ 8,000 billion** over the entire investment period.

▶ **North Africa as a pivotal area in the framework of the BRI:** North African countries can serve: a) as a production area for European markets; b) as a logistic gate for both Europe and sub-Saharan Africa; c) as an energy hub for oil, gas and renewable energies.

▶ In the competition among North African countries to attract Chinese investments, each country should take advantage of: 1) the strategic geographic position; 2) a friendly business climate; 3) political stability. Egypt in north-east Africa and Morocco in the north-west are one step ahead in this competition.

▶ **Energy is a target sector for Chinese investment within the BRI.** China is thirsty for energy: in the forecast to 2040 Chinese oil imports are expected to grow to 12.4 mb/d (million barrel per day) from 7.5 in 2016, while LNG imports will quadruple. Although decreasing, the share on MENA countries on Chinese oil imports is still high: 65%.

Canal's traffic trends after the Suez Canal expansion

This focus analyzes the impact of the New Suez Canal on the shipping in the Mediterranean. As a matter of fact, after the enlargement, traffic through the Canal has increased in double figures. This part will analyze the ships and cargo traffic by type (containers, dry and liquid bulk, etc). The most significant routes of international traffic of ships passing through the Canal and the number of ships with tonnage will be analyzed to highlight the phenomenon of “gigantism”.

The new Geo-maps of SRM will also be used to track the new long-haul routes of Megaships by origin and destination.

Foreword. The Suez Canal: features and traffic capacity

The Suez Canal is an artificial sea-level waterway running north to south across the Isthmus of Suez in Egypt to connect the Mediterranean Sea and the Red Sea.

It was built in 1869 and was 164 km long, 8 mt deep, 53 mt wide and it allowed the transit of ships with 6.7 mt of draught. In 2015 some parts of the Canal were enlarged and today it is 193.30 Km long, 24 mt deep and 205/225 mt wide. The completion of this enlargement allows the transit of ships with 20.12 mt of draught. Transit time is about 15 hours. In 2014, before the enlargement, the daily average of transits was 46,98 ships and transiting net tonnage was 2,637.7 thousand tons. In 2017 the daily average of transits increased to 48.08 ships and that of net tonnage went up to 2,853.6 thousand tons.

The figure below shows traffic trend of the Canal since 2011:

Ships and cargo through the Suez Canal. Trend 2011-2017

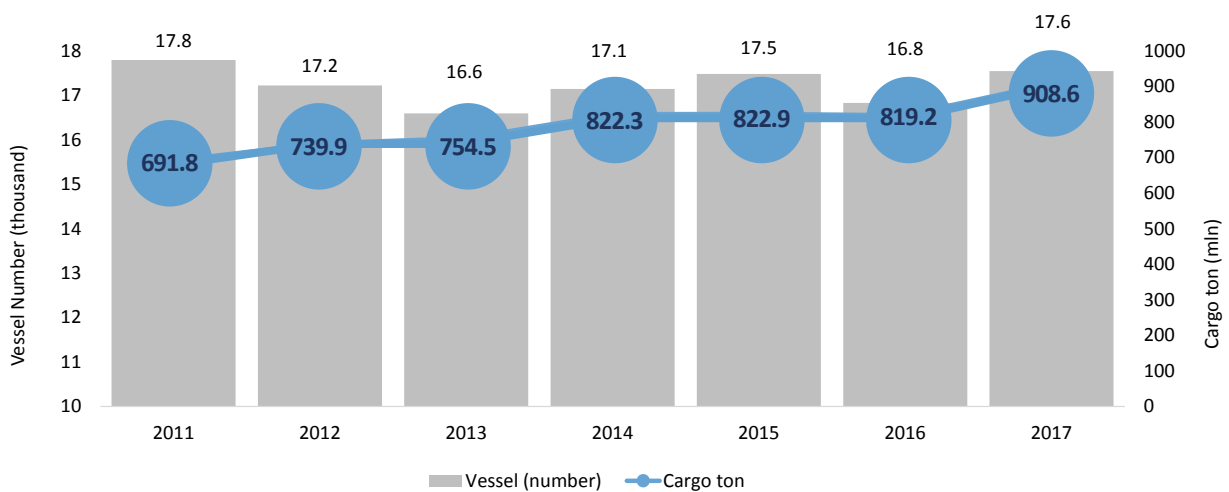


Figure 1 - Source: SRM on Suez Canal Authority (SCA)

Ships traffic evolution

In 2017, 17,550 ships made full transits through the Suez Canal in two directions, recording an increase of 4.3% on 2016. Transiting net tonnage was 1,041 million, recording an increase of 6.9%. The figure below shows that containerships are the most numerous (5,568) vessels with a 32% share and they are followed by tankers (4,537) with 26% and bulk carriers (3,288) covering 19% of the total.

Traffic by ship type (number)

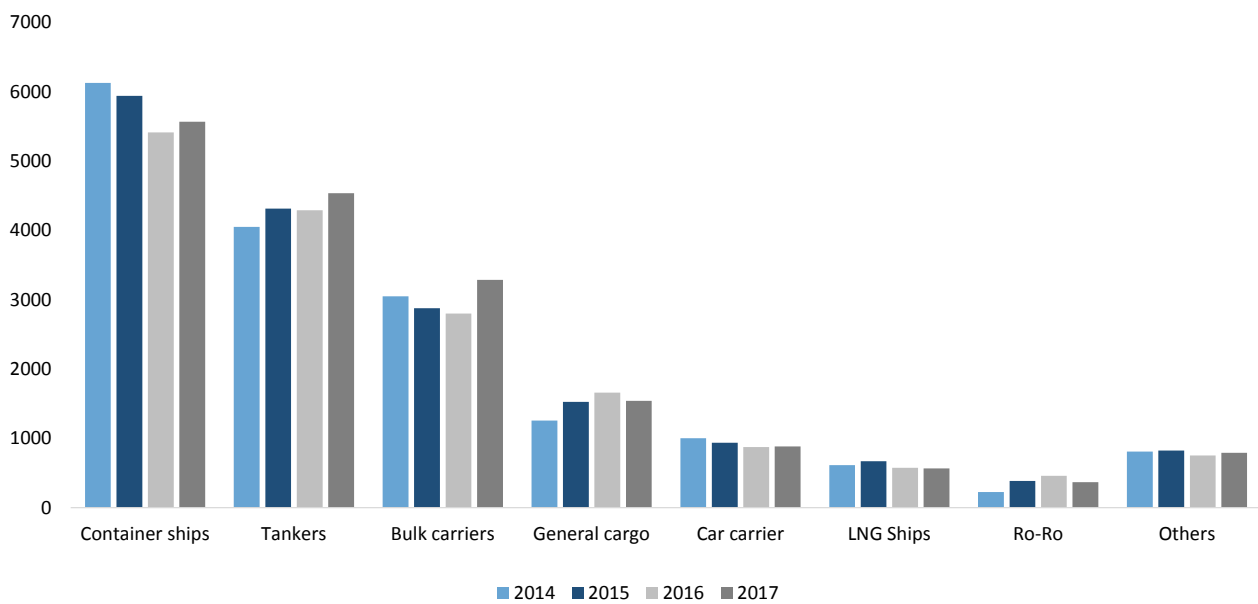


Figure 2 - Source: SRM on SCA

The ratio between net tonnage of transiting ships and number of vessels by type shows that the biggest ships passing through the Canal are containerships (average size 105.74 thousand net ton), followed by LNG. It is also interesting to notice the comparison that this figure makes with the year preceding the enlargement. Thanks to this improvement, the size of transiting containerships has grown following the trend of naval gigantism, which is increasingly gaining importance in the containership sector.

Average net ton by ship type. Comparison 2014-2017

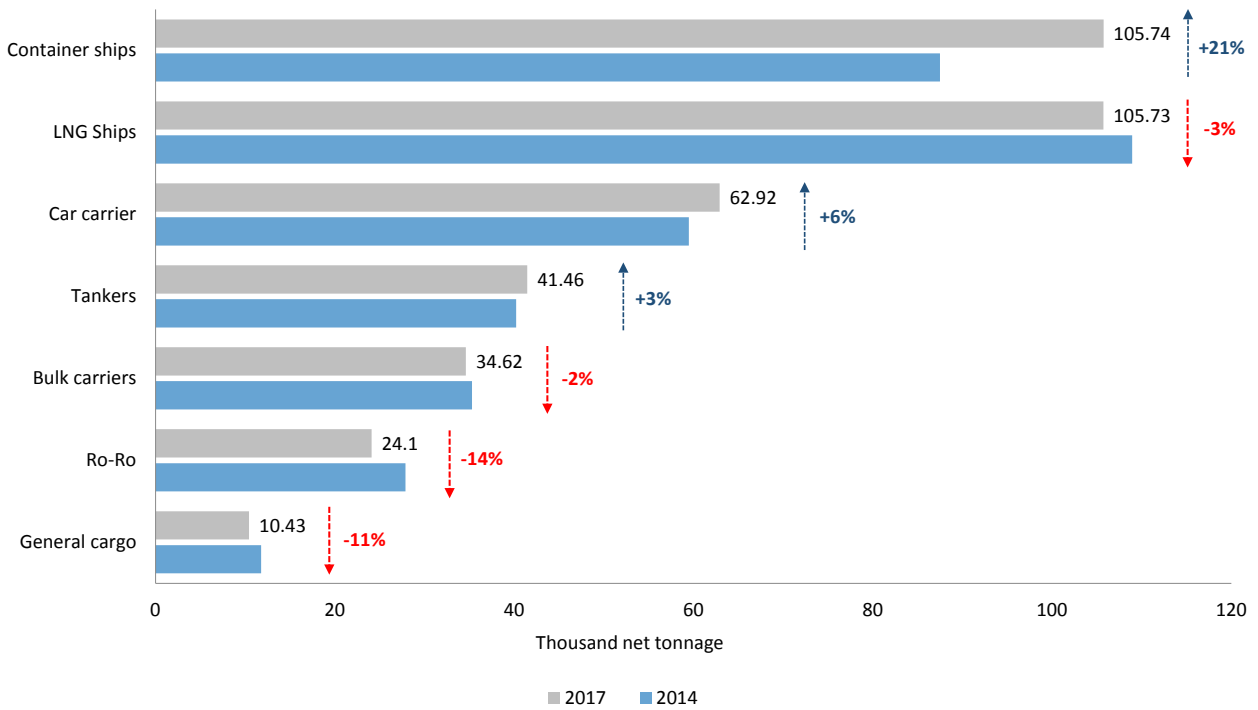


Figure 3 - Source: SRM on SCA

This statistical data is also confirmed by some elaborations made by SRM using innovative geo-surveys of the positioning of the ships.

Containerships – daily movement report (>13,000 TEUs)

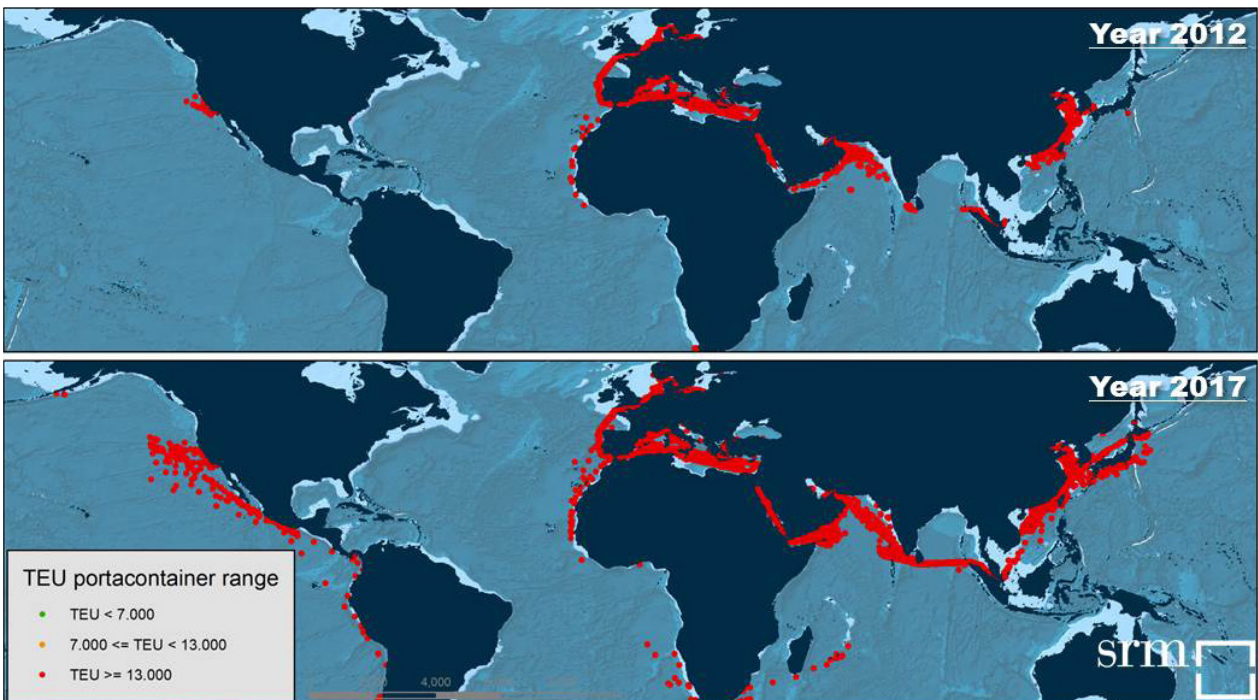


Figure 4 - Source: SRM

Since 2012, these maps show that: a) the presence in the Mediterranean of containerships over 13,000 TEU has increased by 37%, b) the number of vessels between 7,000 and 13,000 TEU has grown by 51.6% and c) ships in the 3,000- 7,000 TEU size have decreased by 18.7%.

Containerships – daily movement report (7,000-13,000 TEUs)

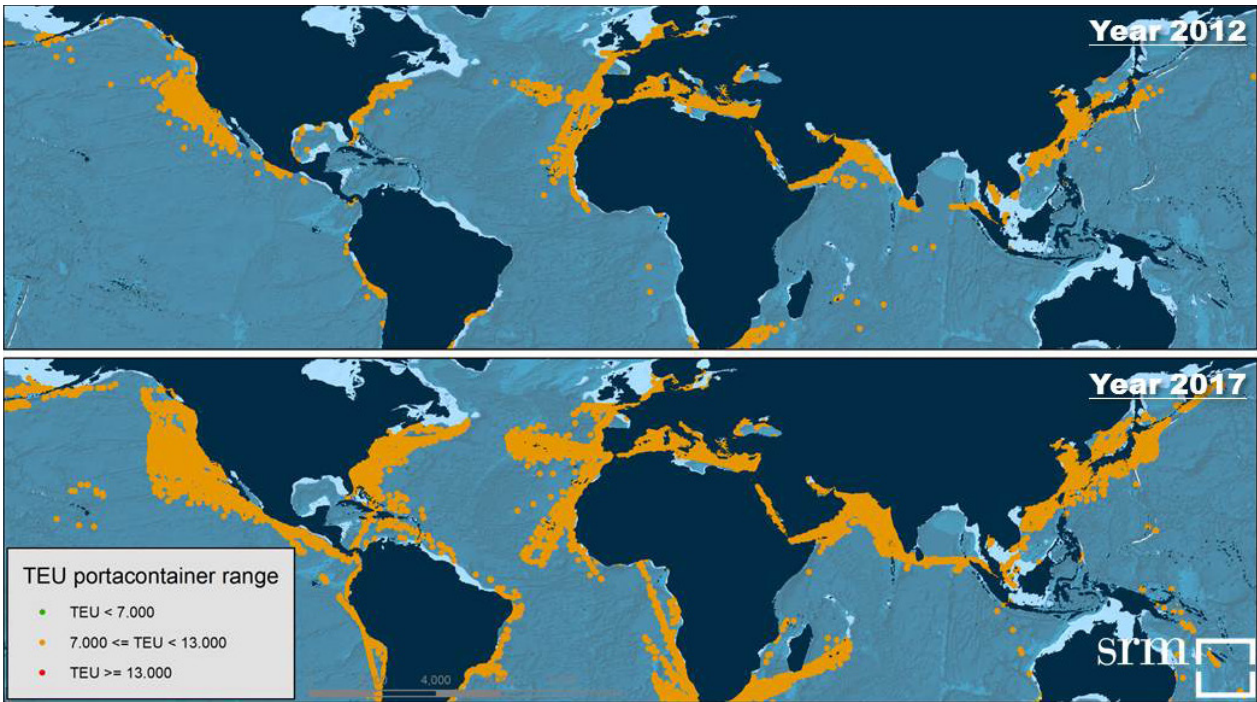


Figure 5 - Source: SRM

Containerships – daily movement report (3,000-7,000 TEUs)

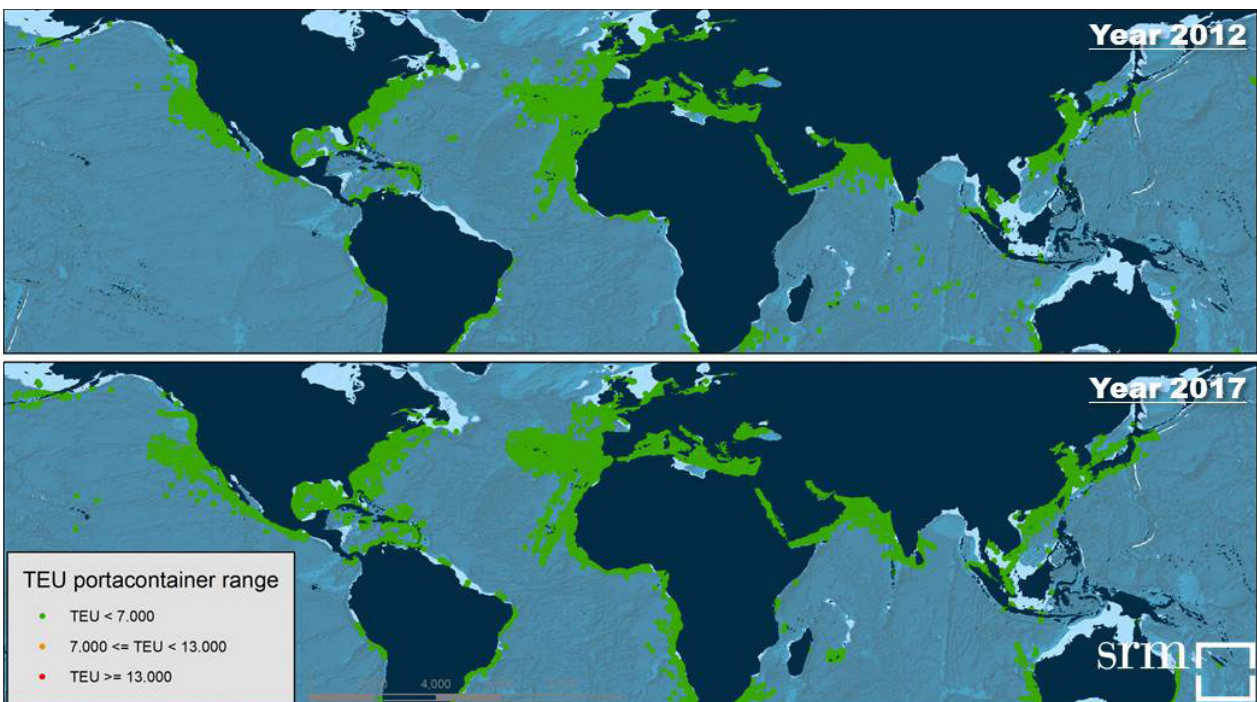


Figure 6 - Source: SRM

Cargo traffic

Transiting goods traffic in 2017 was 909 million tons registering a record growth equal to 10.9% on 2016.

Southbound goods amounted to 478 million tons, increasing by 19.3%, while Northbound goods were 431 million tons (+2.9%). The most important areas in terms of goods traffic north of the Canal were: a) “North, West Europe & UK” with a 25.5 % share of the total goods transits via Suez Canal and b) “East, S.E. Med” with a 20.5% share; the main destinations south of the Canal were “South East Asia” (31.1 %) and the Arabian Gulf (27.6 %)¹. The following figure represent an analysis of the destination of goods transiting through the Canal and show an increase in the period 2001-2017 in both directions: Southbound and Northbound.

2001-2017 growth of Southbound cargo traffic through Suez by markets of origin and destination

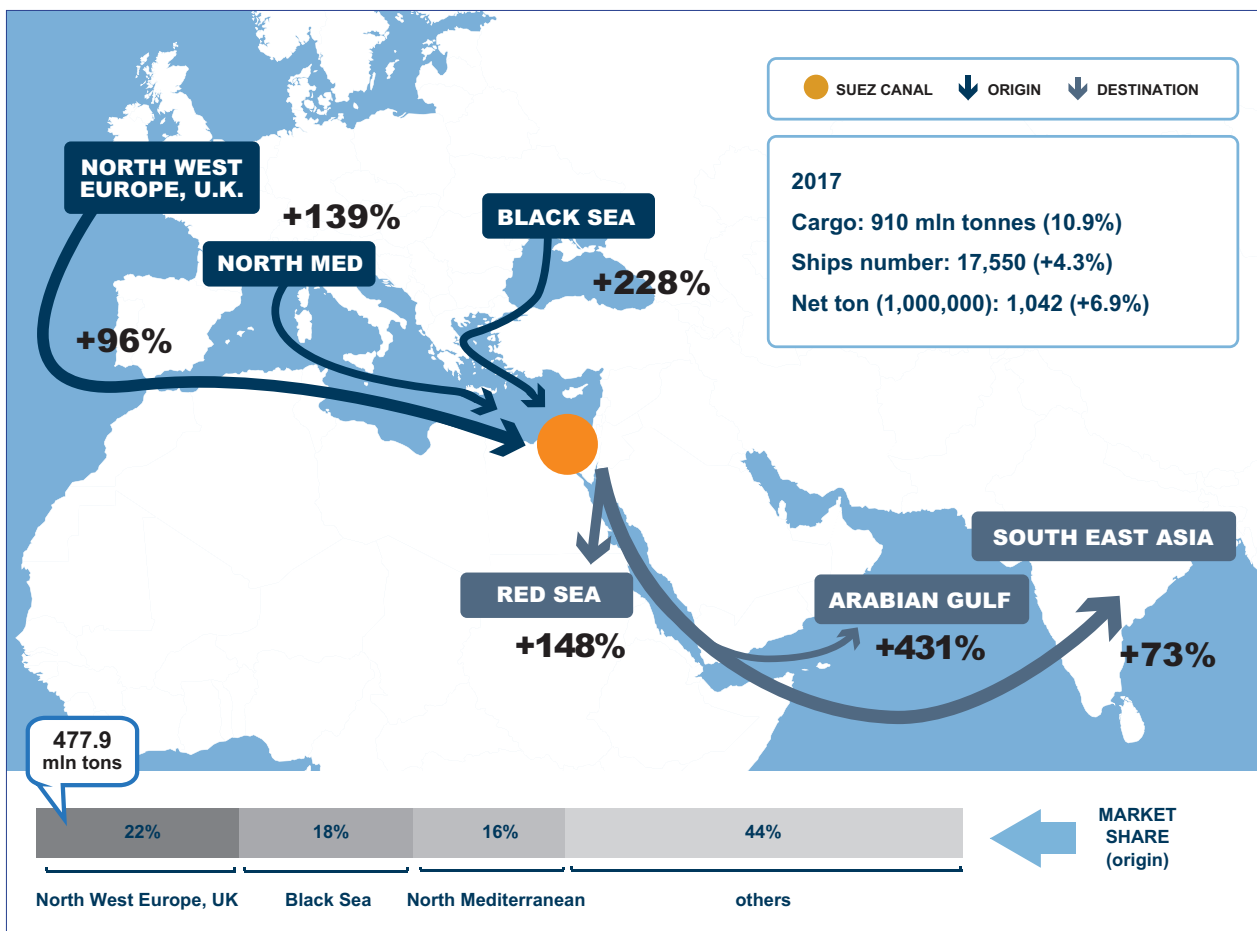


Figure 7 - Source: SRM on SCA

¹ In this regard, it is appropriate to specify that according to the opinion of Assoport - the Italian port Association - the Suez Canal Authority's data related to the regions of origin and destination of goods transiting through Suez have been elaborated considering only the origin/destination places of the goods just before and after crossing the Canal. Giannotti O., Giordano A. (Assoport), *Il Mar Mediterraneo. Scenari geo strategici della portualità italiana nel quadrante Mediterraneo-Mar Nero*, July 2018.

The figure above illustrates the significant increase in goods destined for the Gulf (+431%) and coming from the Black Sea (228%). In terms of volumes, 41% of the Southbound cargo (in 2017) is from the Mediterranean ports, a share that grows to 59% if the Black Sea is also taken into account.

2001-2017 growth of Northbound cargo traffic through Suez by markets of origin and destination

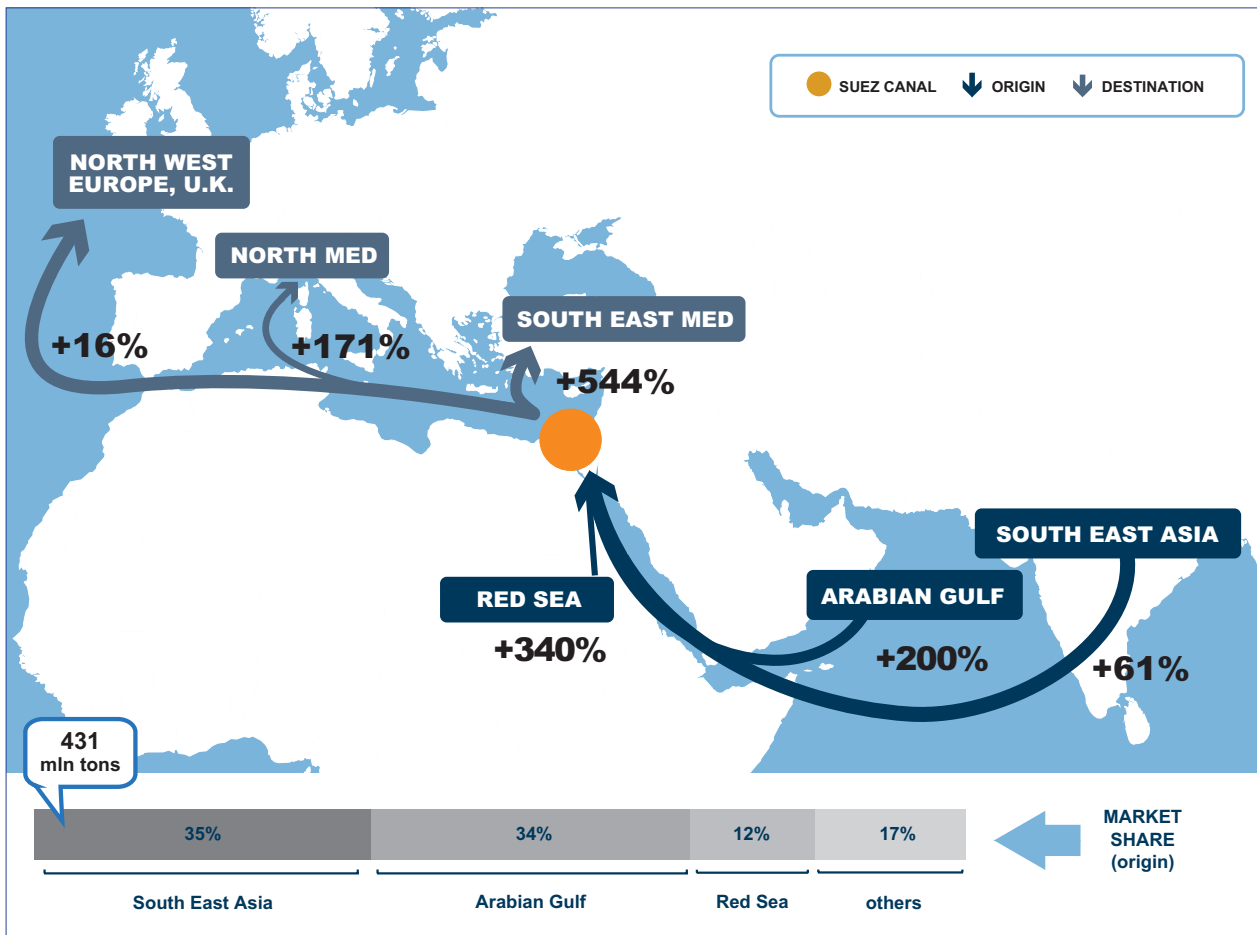


Figure 8 - Source: SRM on SCA

Northbound cargo showed a significant growth too, in particular towards the South East Med (+544%) and from the Red Sea (+340%). In terms of volumes, Mediterranean ports received 57% of the Northbound cargo in 2017, a figure that goes up to 57.7% if Black Sea ports are taken into account. As for the type of goods in transit, containerized cargo and Oil & Products account for 76.1% of the total: these categories recorded an increase of +7.1% and +17.7% respectively compared to 2016. In particular, crude oil recorded a growth of 16.1%. The third type of goods transported through the Suez Canal are cereals and they have also set a new historical peak of 48 million tons, with an increase of 2.5% on 2016.

The figure below illustrates the volume and shares of goods transited in both directions during 2017.

Suez Canal traffic by cargo type (million tons) in 2017

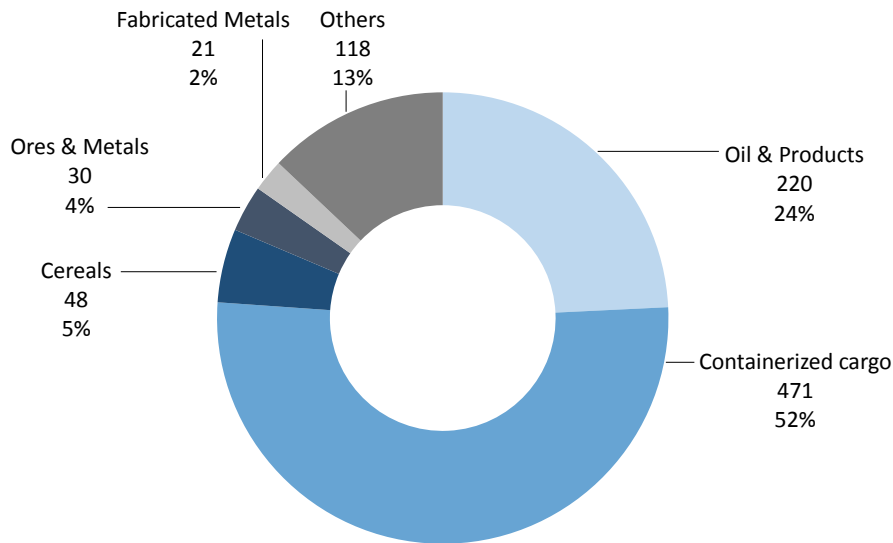


Figure 9 - Source: SRM on SCA

The Suez Canal is therefore an important transit route for crude oil and derived products, together with the 200-mile long SUMED Pipeline, or Suez-Mediterranean Pipeline, that transports crude oil through Egypt from the Red Sea to the Mediterranean Sea. Based on the latest U.S. Energy Information Administration data, total oil flows via SUMED and the Suez Canal were 5.5 million b/d (barrels per day) in 2016, 100,000 b/d more than in 2015.

The Suez Canal and the SUMED Pipeline are therefore the 3rd transit route in the world for crude oil and refined products.

Volume of crude oil and petroleum liquids transported through world chokepoints, 2011-2016 (million barrels per day)

Location	2011	2012	2013	2014	2015	2016
Strait of Hormuz	17	16.8	16.6	16.9	17	18.5
Strait of Malacca	14.5	15.1	15.4	15.5	15.5	16
Suez Canal and SUMED Pipeline	3.8	4.5	4.6	5.2	5.4	5.5
Bab el-Mandeb	3.3	3.6	3.8	4.3	4.7	4.8
Danish Straits	3	3.3	3.1	3	3.2	3.2
Turkish Straits	2.9	2.7	2.6	2.6	2.4	2.4
Panama Canal	0.8	0.8	0.8	0.9	1	0.9
Cape of Good Hope	4.7	5.4	5.1	4.9	5.1	5.8
World maritime oil trade	55.5	56.4	56.5	56.4	58.9	na
World total oil supply	88.8	90.8	91.3	93.8	96.7	97.2

Table 1 - Source: SRM on EIA, 2017

The Suez Canal and the SUMED pipeline are strategic routes for Gulf oil and natural gas shipments to Europe and North America. These two routes combined accounted for about 9% of the world's seaborne oil trade.

In 2017, crude oil and refined products and LNG accounted for 24% and 3% of total Suez cargoes, measured by net metric tonnage, respectively. The 2015 enlargement of the Canal allows more than 60% of all tankers to transit the Canal.

In 2017 Oil & Products (crude oil and refined products) Northbound flows increased by 2.3% to 117.4 million tons, and Southbound grew by 42.3% to 102.7 million tons. Also, increased refined products exports from Russia to Asia contributed to higher Southbound traffic.

Oil exports from Russia accounted in fact for the largest share (23%) of Suez Canal Southbound oil flows, followed by Netherlands (13%) and Turkey (10%). The largest importers of Suez Southbound oil flows were Asian countries, with Singapore, China and India accounting for more than 58% of the total.

Oil exports from Gulf countries (Iran, Iraq, Saudi Arabia, United Arab Emirates, Kuwait, Qatar, Oman) accounted for 86% of Suez Canal Northbound oil flows. The largest importers of Northbound oil flows through the Suez Canal in 2017 were European countries (62%) and the United States (9%).

The figure below shows that after a few years of stability in oil shipments, in 2017 total traffic through the Canal increased significantly (+18%). This reflects increases in OPEC production and exports, including Iraq and Saudi Arabia, as well as the growth in exports from Iran following the lifting of sanctions.

“Oil & Products” traffic through the Suez Canal (000 tons). Trend 2013-2017

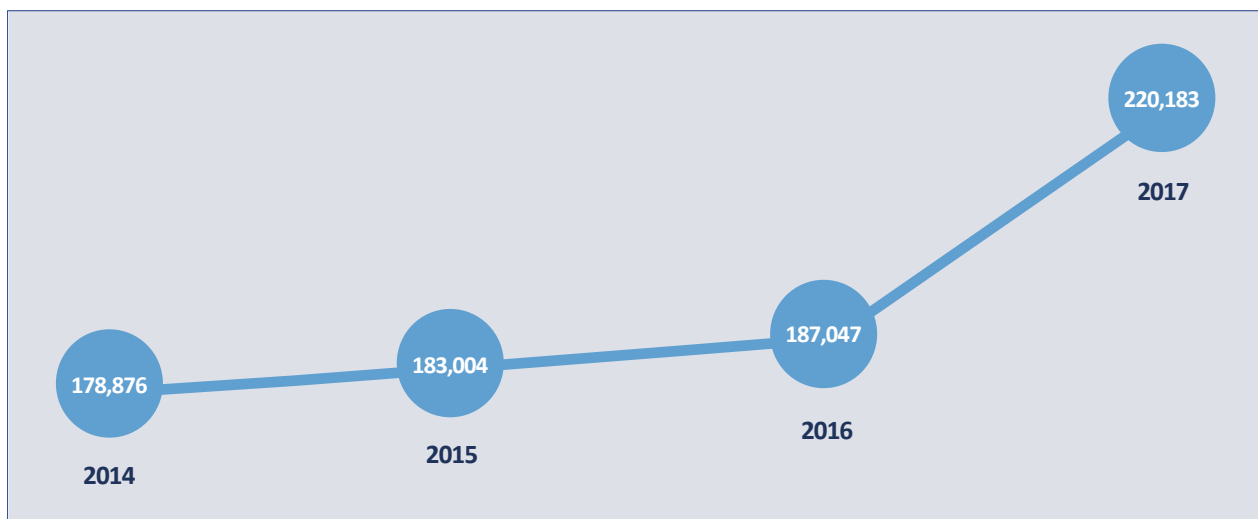


Figure 10 - Source: SRM SRM on SCA, 2018

**Suez Canal and SUMED pipeline flows of oil and liquefied natural gas (LNG) 2011-16
(million barrels per day)**

	2011	2012	2013	2014	2015	2016
Total oil flows via the Suez Canal and SUMED pipeline	3.8	4.5	4.6	5.2	5.4	5.5
Suez Canal total flows:						
<i>crude oil</i>	0.7	1.4	1.5	1.8	1.6	1.8
<i>refined products</i>	1.4	1.6	1.7	2	2.2	2
Total oil	2.2	2.9	3.2	3.7	3.8	3.9
LNG (Tcf per year)	2.1	1.5	1.2	1.2	1.3	1.2
SUMED pipeline crude oil flows	1.7	1.5	1.5	1.5	1.6	1.6

Table 2 - Source: SRM on EIA, 2017

LNG flows through the Suez Canal in both directions were 1.2 trillion cubic feet (Tcf) in 2016, accounting for about 9% of total LNG traded worldwide. Southbound LNG transit mostly originates in Nigeria, France (as re-exports), and Trinidad and Tobago, mostly destined for Egypt, Jordan, and Japan, which combined account for more than 65% of the total southbound LNG imports through the canal. Nearly all of the Northbound transit (99%) is from Qatar and is mainly destined for European markets. The rapid growth in LNG flows through the Suez Canal after 2008 explains the expansion of LNG exports from Qatar.

LNG flows through the Suez Canal in both directions have declined from their peak of almost 2.1 Tcf in 2011. The decrease mostly reflects the fall in Northbound LNG flows and is consistent with LNG import data for the United States, which show that total LNG imports fell dramatically between 2011 and 2016. U.S. LNG imports from Qatar fell from 91 billion cubic feet in 2011 to zero in 2014 and have remained at this level since then. The changes reflect growing domestic natural gas production in the United States, a decrease in LNG demand in some European countries, and strong competition for LNG in the global market. As a result, Suez LNG flows amounted to 9% of total worldwide LNG trade in 2016, a figure that shows a dramatic fall compared to the 2011 share (18%).

The economic effects of the Suez Canal traffic on maritime trade in the Mediterranean sea and in Italy

This focus analyzes the policies implemented by the Suez Canal Authority to attract traffic and the impact these have on the shipping sector in the Mediterranean area and in Italy.

The marketing pricing policies adopted by the Suez Canal Authority: key implications

The Suez Canal Authority is adopting a flexible marketing policy and offering toll rebates to meet the wish of shipowners and operators using the Suez Canal and to encourage more ships to transit it.

Their rationale for tolls is based on the following:

1. Considering the earning capacity of the transiting vessel.
2. Comparing the ship cost through the Suez Canal route with other alternative routes.
3. Enlarging the number of potential canal transit beneficiaries as a step to increase the canal revenues.
4. Giving due consideration to market condition and economic variants.
5. Considering vessel type and size, loading condition and cargo type.
6. Maintaining the application of non-discriminatory measure.

Some examples of these marketing policies concern a tariff line with the 45-55-65% discounts to containerships on some routes from the East Coast ports of the Americas and directed to South and South-East Asia. These rebates shall remain in force until 31/12/2018² and might force carriers to choose to lengthen journey times in order to achieve savings. This is mainly a marketing tool aimed at attracting cargo traffic potentially interested in the Panama Canal.

A specific analysis conducted by specialized research firm Alphaliner on the choices of shipping companies that offer services for container traffic on the route between the Far East and the East Coast of the United States, showed that out of the 19 services offered in

² Suez Canal Authority Circular 2/2016.

In detail the rebates concern:

1. Container ships coming from port of Norfolk and its northern ports heading to the ports of Port Kelang and its eastern Ports shall be granted a reduction of 45% of the Suez Canal normal tolls.
2. Container ships coming from ports south of port of Norfolk heading to:
 - a) Ports of Port Kelang and its eastern ports shall be granted reduction of 65% of the Suez Canal normal tolls.
 - b) Ports of Colombo and its eastern ports located just up to port of "Port Kelang" shall be granted reduction of 55% of Suez Canal normal tolls.

Condition of applying the Circular is that the ship must not call any port in between port of origin and port of destination for commercial purposes.

July 2018 14 were via Panama and 5 via Suez. Average vessel size on the FE-USEC services via Panama has increased rapidly since 2016, and will reach 8,800 TEUs by September 2018 compared to less than 4,600 TEUs prior to the opening of the neo-panamax locks in June 2016. Average vessel size via Suez will reach 9,100 TEU by September 2018, the highest average ever achieved.

Given the situation, the pricing policies adopted by the SCA have an important impact on the choices of carriers regarding the routes to follow.

In recent years, a number of ships of various types has travelled the Northern Sea Route passage, helped by light icing conditions. These included multipurpose cargo vessels and an increasing number of purpose-built ice-class LNG ships. The latter became more commonplace after Russia started to exploit some of its northernmost gas fields.

As far as container ships are concerned, the NSR currently has very little 'mainstream' appeal. While it shortens the distance between the Far East and Europe, it is not navigable year-round and it does not serve any markets along the way. However, the NSR could come in handy for occasional ad-hoc trips. In August 2018, for example, the Russian Arctic Route between the Far East and Europe was navigated by a fully cellular container vessel for the first time in history. Maersk Line has decided that its 3,596 teu newbuilding VENTAMAER-SK will be operational in Europe and serve the NSR, linking Europe's main ports with the Baltic Sea Region. Compared to the normal 10,600 nm routing via the Suez Canal, the trip via the Russian Arctic, on the so-called Northern Sea Route (NSR), saves some 2,800 nm of steaming distance.

The marketing policies adopted by the Suez Canal Authority are addressed to other sectors of maritime transport too.

Some examples of these marketing policies concern a tariff line with the 45-65-75% discounts to Crude Oil Tankers (Laden or Ballast), coming from ports of the US Gulf, Caribbean area and Latin America heading to Asian ports³.

³ Suez Canal Authority Circular 1/2018.

In detail the rebates concern:

1. Crude Oil Tankers coming from ports of the US Gulf, Caribbean area heading to:
 - a) Ports West of Indian subcontinent starting from Karachi to Cochin shall be granted a reduction of 45% of the Suez Canal normal tolls.
 - b) Ports located East of Cochin shall be granted a reduction of 75% of Suez Canal normal tolls.
1. Crude Oil Tankers coming from ports of Latin America Starting from Colombia (San Andres Island - Latitude 12o 34' 40" N) and its south heading to:
 - a) Ports West of Indian subcontinent starting from Karachi to Cochin shall be granted reduction of 65% of the Suez Canal normal tolls.
 - b) Ports located East of Cochin shall be granted a reduction of 75% of Suez Canal normal tolls.

Condition of applying the Circular is that the vessel must not call any intermediate ports during its voyage between origin port and destination port for commercial purposes.

Other toll payment reductions are planned for: a) ships transiting the Suez Canal due to repair or maintenance to be carried out in the SCA Shipyards or its affiliated companies⁴; b) LNG Carriers transiting Suez Canal with large gas quantities⁵; c) super tankers transiting the Canal partially loaded after lightering part of their cargo through the SUMED pipeline⁶.

The Impact of Suez traffic on the portuality of the Med and of Italy. The role of SEZ

The policy of attracting traffic through Suez has significant implications in the portuality of the Mediterranean. Over the last 10 years, cargo transiting in both directions has grown by 25.7% but it is also important to highlight that in the same period containerised goods have increased by 37%. The importance of this sector has therefore increased dramatically, which, to a certain extent, has resulted in increased movement of containers by Short Sea Shipping in the Mediterranean (+37%)⁷. Also, according to UNCTAD forecasts, global maritime transport will grow by 3.8% in the period 2018-2023. Considering that, the Mediterranean sea accounts for 20% of the world seaborne transport, this area is expected to follow a similar trend, which is bound to affect port throughput.

In fact, between 2007 and 2017, the throughput of containers in the ports of the Mediterranean and the Black Sea has grown from 44 million TEUs to 57 million, showing a 30% increase⁸. In Italy, the increase amounted to a mere 1%, a result that was probably affected by the growth of ports on the South and East banks of the Mediterranean Basin. If our port system had shown a similar performance to the average of the Mediterranean ports, it could have handled 3 million TEUs more in 2017.

Our gap with competitor ports does not depend only on quantities handled but also on the quality of industrial and logistic processes. The main issue seems to be that in our country we do not work with the content of containers as these are not logistically handled but simply moved or transhipped from a vessel to the other. Handling the content of a container generates approximately € 2,300 while the mere movement of the same container only results in a € 300 gain. Since 37% of our container traffic is transhipped, a shift from moving to handling would result in an extra € 8.5 billion for our economy.

⁴ Suez Canal Authority Circular 5/2011.

⁵ Suez Canal Authority Circular 3/2011.

⁶ Suez Canal Authority Circular 5/2004 & Circular 2/2013.

⁷ In this case we are referring to SSS container traffic of EU 28 countries in the Mediterranean basin and in the Black Sea. The period analysed is 2008-2016 (last available year). Eurostat (April 2018), *Short Sea Shipping of goods*.

⁸ Assoport (2018), *Il Mar Mediterraneo. Scenari geo strategici della portualità italiana nel quadrante Mediterraneo-Mar Nero*.

Another important indicator affecting container traffic is Special Economic Zones. A previous study from SRM conducted on a sample of 10 Med ports with a SEZ illustrated that over the last 10 years this kind of traffic showed average annual increases of 8.4% (it is useful to highlight that in Italy this growth only amounted to 1%). If we managed to follow the aforementioned high growth trend also in Italian ports, this would result in volumes to grow until 11.5 million TEUs. This traffic increase would also bring as a consequence some positive impacts concerning the logistic handling with added value.

SEZ are also important in terms of their attractiveness to foreign investment. As thoroughly explained in the chapter about the Suez Canal Zone, the Egyptian canal's surrounding area is witnessing such a high concentration of significant foreign investment that it has been necessary to identify a "Chinese Zone" and a "Russian Zone".

International performance indexes: Egypt ranking and its maritime and logistics connection

This chapter analyzes Egypt's features in terms of shipping connectivity (regular shipping services for the import and export of manufactured goods) and logistics performance (customs, infrastructures, shipping rates, logistic services, consignments, timeliness). These two elements are important for facilitating the business of manufacturing companies, and, more in general, to improve efficiency in trade and supply chains.

According to the LSCI (*Liner Shipping Connectivity Index*), Egypt has a good transport connectivity. In 2018, with an index of 70.3, Egypt ranked 18th in the global table (China is 1st in the world), 3rd among the MENA countries and 2nd among South Mediterranean countries. In 2004 Egypt's LSCI was 42.9, much lower than in 2018 (70.3), and it is easy to notice how sharply it increased after 2015 (Suez Canal expansion), from 61.5 to 70.3. Since 2004, the linear trend shows an increase of 1.5 points every year for Egypt's LSCI. However, Egypt's potentials are even more considerable. In fact, some MENA countries (e.g., Morocco and the UAE), thanks to their big investments in ports and related infrastructures, have dramatically improved their transport connectivity and the same may happen for Egypt.

Based on the LSBCI (*Liner Shipping Bilateral Connectivity Index*), which analyzes connectivity between two countries, Egypt is well connected with Italy, Spain, France, China and Malaysia. Among MENA countries, Turkey is the one with which Egypt has the highest LSBCI. Morocco, Russia, Slovenia, Viet Nam and Lebanon are the countries with which Egypt's LSBCI increased more in the period 2006-2016.

In 2018 Egypt had an LPI of 2.8 and ranked 67th in the global table. Some MENA countries show a better LPI than Egypt's. In particular, in 2018 Egypt ranked 9th among the other MENA countries.

A more detailed analysis, taking into account the *LPI domestic index*, shows that Egypt's operators generally rate highly their port and airport infrastructure and services, while their assessment of quality is less positive when it comes to road and rail. Therefore, on the whole, Egypt's logistic system needs improvements, especially in the road and rail system. Anyway, investments in the maritime sector are needed as well to improve Egypt's shipping connectivity and give the country a more prominent role in international trade, as Morocco's and UAE's experiences show.

Liner Shipping Connectivity Index (LSCI): a comparison with other MENA countries

Every Country's access to global markets depends largely on their transport connectivity, especially as regards regular shipping services for the import and export of manufactured goods. UNCTAD's Liner Shipping Connectivity Index (LSCI) aims at capturing a country's level of integration into global liner shipping networks. The current version of the LSCI is generated from five components: (a) the number of ships; (b) the total container-carrying capacity of those ships; (c) the maximum vessel size; (d) the number of services; and (e) the number of companies that deploy container ships on services from and to a country's ports.⁹

Based on the LSCI, Egypt has a good transport connectivity. In 2018 Egypt, with an index of 70.3, it ranked 18th in the global table (China is 1st in the world, followed by Singapore and South Korea), 3rd among the MENA countries (After the UAE and Morocco) and 2nd among South Mediterranean countries (after Morocco).

Egypt's LSCI in 2018: a comparison with MENA countries

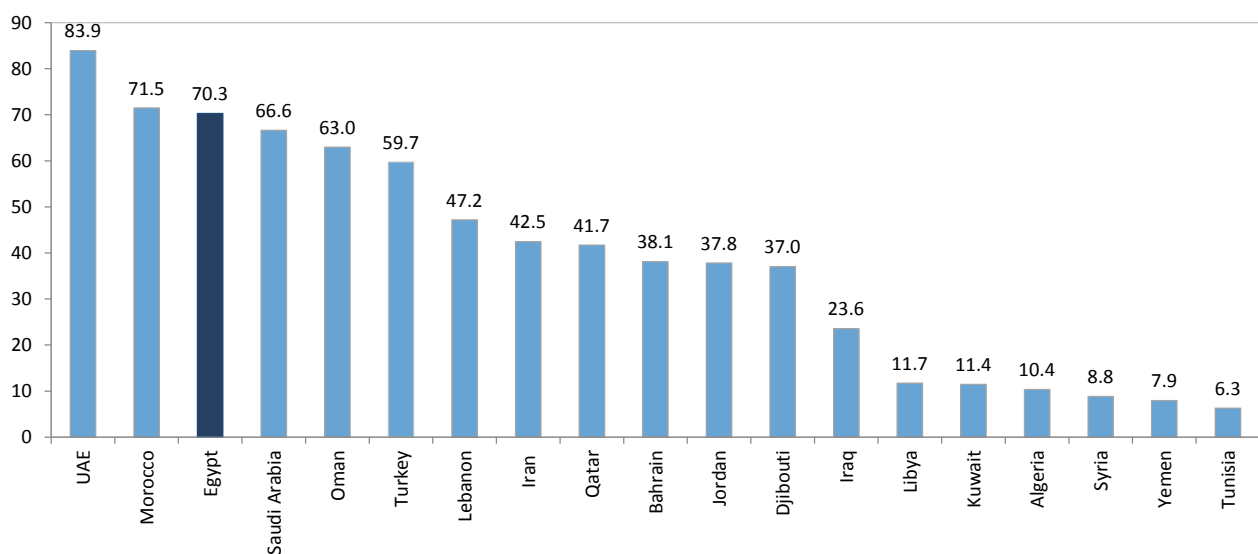


Figure 11 - Source: SRM on Unctad data

It's interesting to analyze the trend of Egypt's transport connectivity over the years. Unctad's data show that in 2004 (first available year) Egypt's LSCI was 42.9, much lower than in 2018 (70.3), and it is also easy to notice how sharply it increased after 2015 (Suez Canal expansion), from 61.5

⁹ The index is generated as follows: for each of the five components, a country's value is divided by the maximum value of that component in 2004, and for each country, the average of the five components is calculated. This average is then divided by the maximum average for 2004 and multiplied by 100. In this way, the index generates the value 100 for the country with the highest average index of the five components in 2004.

to 70.3. Since 2004, the linear trend shows an increase of 1.5 points every year for Egypt's LSCI. However, Egypt's potentials are even higher. Some MENA countries, thanks to their big investments in ports and related infrastructures have dramatically improved their transport connectivity over the past 15 years. Take Morocco, for example: its LSCI in 2004 was 9.4, 78th in the global ranking, 12th among MENA countries. In less than a decade, it climbed the ranking and in 2010 it placed 18th, with an LSCI of 49.4. In 2018 Morocco ranked 17th in the global rank, 2nd among MENA countries. Let's consider now the UAE: among MENA countries, It was 2nd in LSCI ranking in 2004, but over the years it has increased its LSCI more significantly than Egypt. Since 2010 the UAE has ranked 1st among the MENA countries. In conclusion, Morocco and the UAE show how important is investing in ports to increase shipping connectivity. Egypt has lost positions from 2004 up till 2015, but, after the Suez Canal expansion and thanks to further infrastructural investments, Egypt's LSCI has increased a lot. Probably, further improvement will occur over the next years.

Egypt's LSCI trend 2004-2018

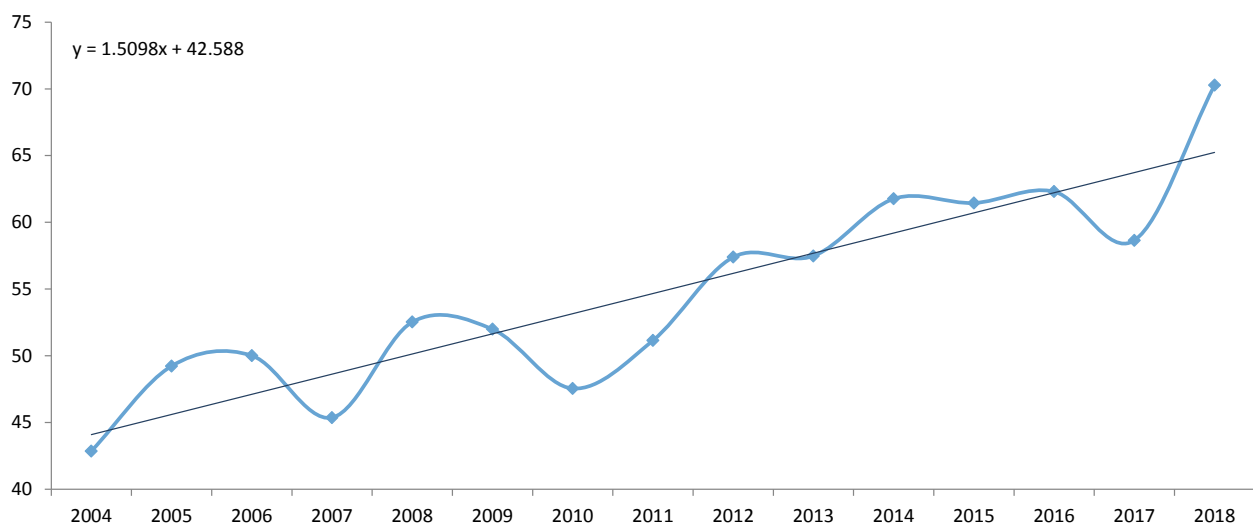


Figure 12 - Source: SRM on Unctad data

LSCI: First 5 MENA countries dynamic

	2004	2010	2015	2018
1° Egypt	42.9	UAE 63.4	UAE 70,4	UAE 83.91
2° United Arab Emirates	38.1	Saudi Arabia 50.4	MOROCCO 68,3	MOROCCO 71.5
3° Saudi Arabia	35.8	Morocco 49.4	Saudi Arabia 64,8	Egypt 70.28
4° Turkey	25.6	Oman 48.5	Egypt 61,5	Saudi Arabia 66.62
5° Oman	23.3	Egypt 47.6	Turkey 52,0	Oman 62.97

Table 3 - Source: SRM on Unctad data

The liner shipping bilateral connectivity index (LSBCI) is an extension of UNCTAD’s country-level Liner Shipping Connectivity Index (LSCI) and is based on a proper bilateralization transformation. It shows the level of liner shipping connectivity between two countries. The current version of the LSBCI includes 5 components. For any pair of countries A and B, the LSBCI is based on:

1. the number of transshipments required to get from country A to country B;
2. the number of direct connections common to both country A and B;
3. the geometric mean of the number of direct connections of country A and of country B;
4. the level of competition on services that connect country A to country B;
5. the size of the largest ships on the weakest route connecting country A to country B.

The LSBCI aims to answer the following question: which country is Egypt better connected with? If we take into account all the countries in the world it is Italy, Spain, France, China and Malaysia that have the higher LSBCI with Egypt, more than 0.64 points (the index can range between 0, minimum value, and 1, maximum value). Morocco, Russia, Slovenia, Viet Nam and Lebanon are the countries with which Egypt’s LSBCI increased more in the 2006-2016 period. Liberia, Tonga, Comoros, Yemen and Sierra Leone are the ones with a decreasing LSBCI.

Among MENA countries, Turkey is the one with which Egypt has the highest LSBCI, followed by Saudi Arabia, the UAE and Lebanon, with an LSBCI higher than 0.55. Over the past decades, Egypt’s LSBCI with Turkey, UAE and Lebanon has remarkably increased.

Egypt’s LSBCI: countries with the best LSBCI, with an increasing LSBCI and with a decreasing LSBCI

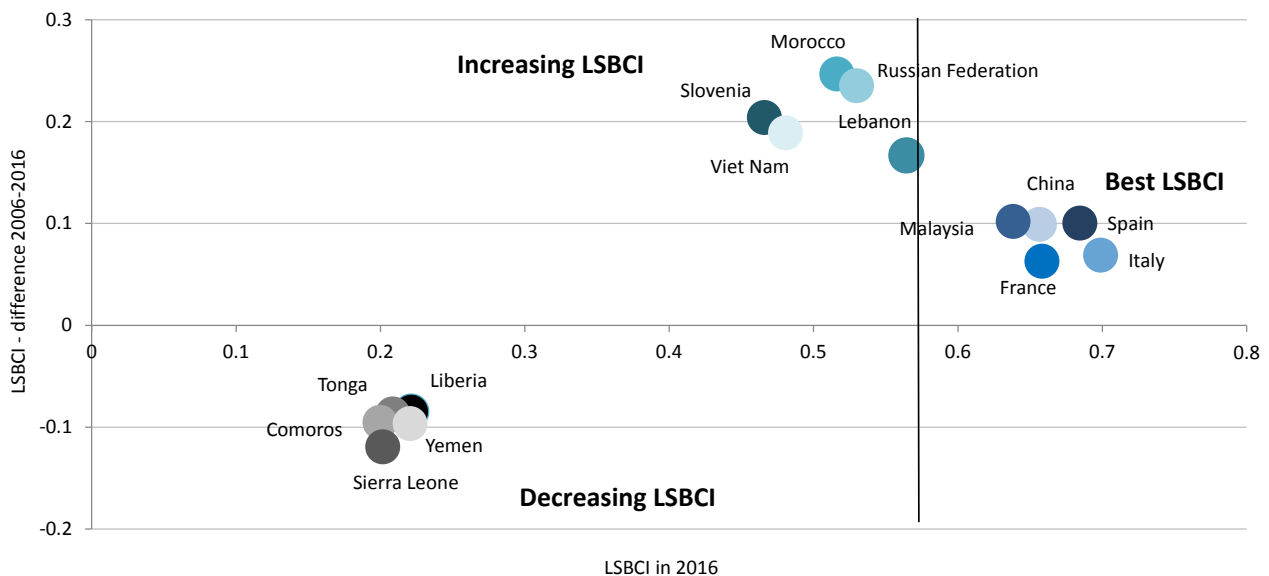


Figure 13 - Source: SRM on Unctad data

Egypt's LSBCI with MENA countries (2016)

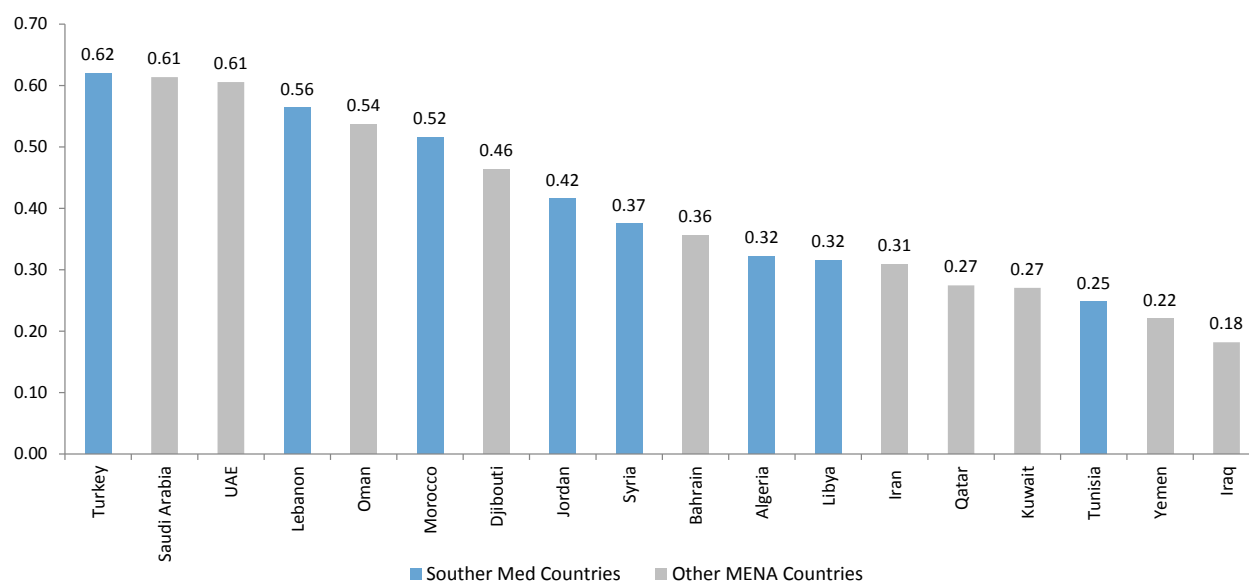


Figure 14 - Source: SRM on Unctad data

Egypt's LSBCI: First 10 MENA countries dynamic

		2006	2010	2016		
1°	Saudi Arabia	0.50	Turkey	0.52	Turkey	0.62
2°	Turkey	0.49	Saudi Arabia	0.51	Saudi Arabia	0.61
3°	UAE	0.45	UAE	0.48	UAE	0.61
4°	Lebanon	0.40	Oman	0.46	Lebanon	0.56
5°	Oman	0.39	Djibouti	0.44	Oman	0.54
6°	Syria	0.38	Lebanon	0.42	Morocco	0.52
7°	Jordan	0.35	Morocco	0.41	Djibouti	0.46
8°	Iran	0.34	Jordan	0.40	Jordan	0.42
9°	Algeria	0.32	Syria	0.36	Syria	0.37
10°	Djibouti	0.32	Iran	0.36	Bahrain	0.36

Table 4 - Source: SRM on Unctad data

Logistics Performance Index (LPI): a comparison with other MENA countries

The Logistics Performance Index (LPI) is an interactive benchmarking tool created to help countries identify the challenges and opportunities they face in their performance on trade logistics and what they can do to improve their performance. The LPI 2018 allows for comparisons across 160 countries. It is based on a worldwide survey of operators on the ground (global freight forwarders).

ders and express carriers), providing feedback on the logistics “friendliness” of the countries in which they operate and those with which they trade.

It measures performance along the logistics supply chain within a country and offers two different perspectives: a) international and b) domestic.

a) *International LPI*: provides qualitative evaluations of a country in six areas by its trading partners—logistics professionals working outside the country.

The six core components are:

- The efficiency of customs and border clearance (“Customs”).
- The quality of trade and transport infrastructure (Infrastructure”).
- The ease of arranging competitively priced shipments (Ease of arranging shipments”).
- The competence and quality of logistics services (“Quality of logistics services”).
- The ability to track and trace consignments (“Tracking and tracing”).
- The frequency with which shipments reach consignees within scheduled or expected delivery times (“Timeliness”).

b) *Domestic LPI*: provides both qualitative and quantitative assessments of a country by logistics professionals working inside it. It includes detailed information on the logistics environment, core logistics processes, institutions, and performance time and cost data.

In 2018 Egypt ranked 67th in the world with an LPI of 2.8, a figure that showed a slight improvement on the 2007 performance (LPI 2.3, 97th position in the world). Egypt’s LPI trend also showed a peak of 3.2 in 2016 (49th) and then fell to 2.8 in 2018, making it the 67th country in the world and the 9th in the MENA area. The following MENA countries showed better performances in terms of LPI (higher than 3.0): the UAE, Qatar, Oman and Turkey.

Egypt’s LPI compared to other MENA countries

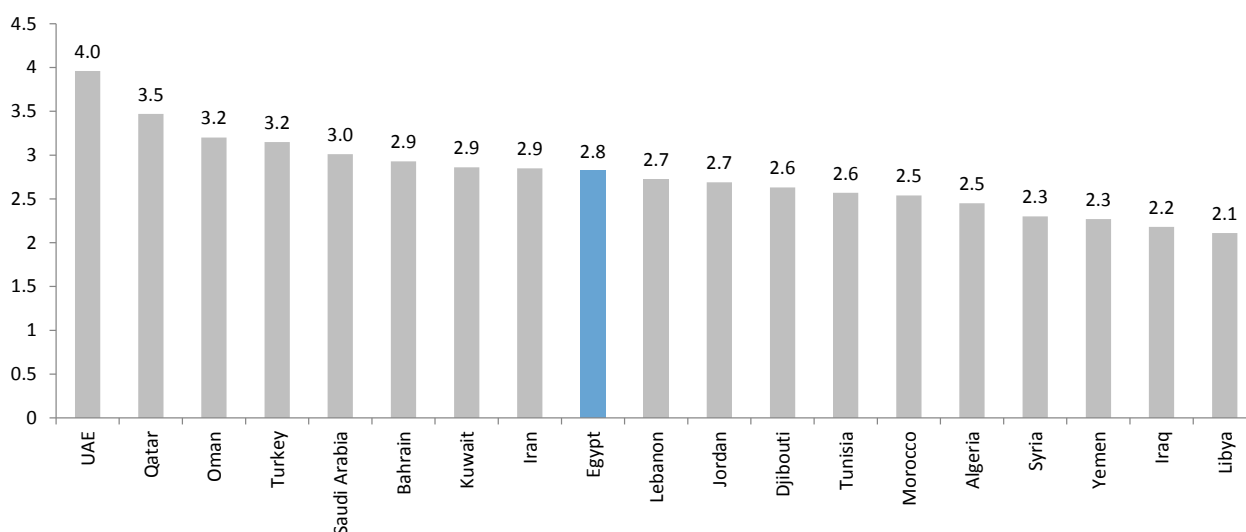


Figure 15 - Source: SRM on World Bank data

If we break the LPI down into its 6 components, Egypt shows a better index as for 1) The quality of trade and transport infrastructure and 2) The competence and quality of logistics services.

Egypt's LPI breakdown of its 6 components (ranking in the global table)

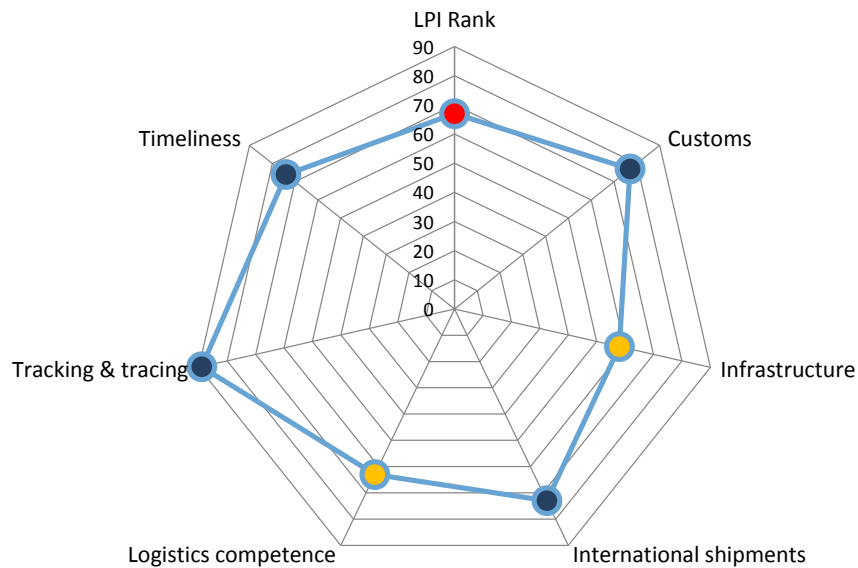


Figure 16 - Source: SRM on World Bank data

In order to further investigate Egypt's logistic performances, it is necessary to analyze the Domestic LPI, which includes detailed information on the logistics environment, core logistics processes, institutions, and performance time and cost data.

Domestic LPI performances data analyze export and import distance and lead time as for the port and the land supply chain. Export distance in Port or airport supply chain in Egypt is 349km, less than the MENA average, but more than the LPI top performer (Germany). Lead time is not high (2 days, like Germany's lead time). Some difficulties emerge as for Land supply chain, for which average distance (792km) and lead time (5 days) are higher than both the Top Performer (Germany) and the MENA average. As for goods in imports, lead time is high both for the Port and airport supply chain (5 days/2 days in Germany) and for the Land supply chain (6 days/3 days in Germany).

The World Bank's domestic LPI survey gives some information on local logistics professionals perception in terms of fees/charges, Quality of trade and transport related infrastructure, Quality of service delivered, Sources of Major Delays, Changes and developments in the logistic system.

Fees and charges are considered too high by local operators in Egypt: the percent of respondents answering high/very high charges is 67% for port (vs 47% for MENA average and Germany), 50% for airport (vs 34% for MENA and 58% for Germany), 33% for road (vs 15% 27%) and 0% for rail transport (vs 6% and 25%).

Quality of trade and transport related infrastructure gets different perceptions depending on the infrastructure considered. As for ports, percent of respondents answering low/very low is 17%, in

line with MENA countries average, but higher than Germany's one, where no professionals consider the quality of ports low. As for airports, data are similar. As for roads, and especially for rail, the percent of professionals answering low/very low is much higher, respectively 33% (vs 11% in MENA and 14% in Germany) and 50% (vs 58% and 23%).

A similar assessment can be made for the quality of services delivered. 67% of respondents say the quality is high/very high for air transport (vs 44% for MENA average and 95% for Germany) and maritime transport (vs 69% and 95%). On the other hand, only 33% of respondents consider the quality of services delivered in road transport is high or very high (vs 54% and 95%) and 20% in rail transport (vs 16% and 62%).

Compulsory warehousing/transloading is a source of delay for 17% of respondents, while Pre-shipment inspection for 50% (compare it with 32% in MENA countries and 5% in Germany).

However, a good chunk of respondents see improvement in the logistics system in Egypt. In particular, 50% of respondents see improvement in trade and transport infrastructure, and 67% in private logistics services, in line with MENA and Germany. Finally, only 33% of respondents consider customs clearance procedures improved or much improved (vs 56% for MENA average and Germany).

Egypt's Domestic LPI - Performances

	Egypt	Middle East & North Africa	Top Performer 2018 (Germany)
Export time and distance / Port or airport supply chain			
Distance (kilometers)	349 km	577 km	212 km
Lead time (days)	2 days	2.8 days	2 days
Export time and distance / Land supply chain			
Distance (kilometers)	792 km	700 km	569 km
Lead time (days)	5 days	4.1 days	2 days
Import time and distance / Port or airport supply chain			
Distance (kilometers)	452 km	540km	350 km
Lead time (days)	5 days	4.5 days	2 days
Import time and distance / Land supply chain			
Distance (kilometers)	554 km	740 km	559 km
Lead time (days)	6 days	5 days	3 days

Table 5 - Source: SRM on World Bank data

Egypt's Domestic LPI - Environment and Institutions

Fees and Charges - Percent of respondents answering high/very high	Egypt (%)	Middle East & North Africa (%)	Top Performer 2018 (Germany) (%)
Port charges	67	47	47
Airport charges	50	34	58
Road transport rates	33	15	27
Rail transport rates	0	6	25
Quality of trade and transport related infrastructure - Percent of respondents answering low/very low			
Ports	17	21	0
Airports	17	10	0
Roads	33	11	14
Rail	50	58	23
Quality of service delivered - Percent of respondents answering high/very high			
Road	33	54	95
Rail	20	16	62
Air transport	67	44	95
Maritime transport	67	69	95
Sources of Major Delays - Percent of respondents answering often or nearly always			
Compulsory warehousing/transloading	17	18	0
Pre-shipment inspection	50	32	5
Maritime transshipment	0	10	5
Changes - Percent of respondents answering improved or much improved			
Customs clearance procedures	33	56	56
Trade and transport infrastructure	50	52	45
Private logistics services	67	67	70

Table 6 - Source: SRM on World Bank data

The Belt & Road Initiative and the Role of the Mediterranean countries

The BRI and the Chinese development strategy for the future

The Chinese Belt & Road Initiative (BRI) is probably the most important investment project worldwide since the Marshall Plan that followed World War 2 in terms of number of countries involved in the project and amount of financial resources devoted to the initiative¹⁰.

The BRI



Figure 17 - Source: SRM

¹⁰ The Marshall Plan financial resources are estimated at about \$130 billion at 2016 dollar values (\$13bn originally), compared to the total resources devoted to the BRI estimated between \$1 and \$8 trillion, depending on the timeline. Steinbock D, "How the Belt and Road could change the 21st Century", in *China Daily*, May 15 2017.

Based on official statements and documents by Chinese officials and agencies, the project aims to implement the following:

1. an inland Silk Road economic belt connecting West China with Europe via Central Asia, Russia and Northeast Europe, as well as with the Indian Ocean through Pakistan. A network of railway lines, highways and pipelines will form the inland economic belt.
2. a maritime Silk Road to connect the Southeastern coastline of China to the Mediterranean Sea through the South China Sea, the Indian Ocean and the Suez Canal. The project involves investments in port areas and inland logistic and industrial facilities along these maritime routes.

The BRI was officially launched by President Xi Jinping in a speech at Nazarbayev University in Astana (Kazakhstan) in September 2013. It originally involved 65 countries¹¹ in Asia, Europe and Africa and will be wholly completed by 2049. According to some estimates, China will spend around \$1,000 billion in the next ten years to implement the initiative. The financial resources required would total around \$8,000 billion over the entire investment period¹².

The GDP in these 65 countries considered as a whole represents around 1/3 of the entire world's GDP and over 60% of the world's population.

Furthermore, since its launch many other countries have expressed interest in the project, by joining the Asian Infrastructure Investment Bank (AIIB)¹³ or planning and developing transport infrastructures in cooperation with China.

In fact, 48 other countries – besides the 65 countries officially involved in the BRI since its launch – have been identified so far. They are likely to become active participants in the project. As of September 2017 China had already signed cooperation agreements with 74 countries¹⁴.

The project will probably extend to other areas of the world, involving countries in Oceania and South America as well.

Table 7 is a list of European and MENA countries involved in the BRI (in bold type, the countries with shores on the Mediterranean Basin).

43 European countries and 19 countries of the MENA region are involved in the BRI or have shown interest in the project. Among these, there are 22 countries with shores on the Mediterranean Basin, 13 of them are European countries and 9 of them fall within the MENA region.

¹¹ Industrial Cooperation between Countries along the Belt and Road, China International Trade Institute, August 2015.

¹² Hillman J.E., "How Big Is China's Belt and Road?", April 3, 2018, Center for Strategic and International Studies.

¹³ AIIB, a multilateral development bank created in 2016, is one of the most important financial pillar of the BRI. It has 86 approved members as at October 2018.

¹⁴ Keynote speech of Chinese President Xi Jinping at the opening ceremony of the Belt and Road Forum (BRF) for International Cooperation in Beijing, May 14, 2017.

European and MENA countries involved in the BRI

Europe			MENA	
Albania	Georgia	Poland	Algeria	Syria
Austria	Germany	Portugal	Bahrain	Tunisia
Armenia	Greece	Romania	Djibouti	UAE
Azerbaijan	Hungary	Russia	Egypt	Yemen
Belarus	Iceland	Serbia	Iran	
Belgium	Italy	Slovak Republic	Iraq	
Bosnia and H.	Latvia	Slovenia	Israel	
Bulgaria	Lithuania	Spain	Jordan	
Croatia	Luxembourg	Sweden	Kuwait	
Cyprus	FYR Macedonia	Switzerland	Lebanon	
Czech Republic	Malta	Turkey	Morocco	
Denmark	Moldova	Ukraine	Oman	
Estonia	Montenegro	United Kingdom	Qatar	
Finland	Netherlands		Saudi Arabia	
France	Norway		Palestine	

Table 7 - Source: SRM on World Bank data

The underlying logic of the BRI

- Maintaining sustained and long-lasting economic growth for China;
- Solving the Chinese internal economic imbalance between coastal regions and inland lagging areas;
- Taking advantage of the BRI as a transition tool that can allow China to move from an economic model based on low cost manufacturing to a new economic model based on high value added production.
- Using Chinese overcapacity in the steel and cement industries for investment in infrastructures in recipient countries along the route.
- Securing sufficient energy sources for the Chinese economy in the coming years.

The analysis of the impact of such a complex strategy and ambitious project on Mediterranean countries is the main goal of this chapter.

China economy's growth rate has shrunk in recent years when compared to the period 2000-2010, due to the increase of labour cost: the BRI can open new markets for Chinese companies and give a new impetus to China's economy.

The huge internal imbalance between lagging western regions and developed coastal areas is one of the main problems that the Chinese authorities wish to solve. It is not only a matter of contrasting levels of economic development but also the fact that the imbalances can put at risk the cohesion of the country itself. The choice of the Xinjiang region as the starting point of the inland economic belt connecting China with Europe is a huge opportunity of development for west China and for Central Asian countries as well. These areas had been cut out of the maritime commercial routes that had facilitated the economic development of the coastal regions in south-east China at the beginning of the opening process undertaken in the last decade of XX Century. The aim of the Chinese authorities is to make China the global leader in the field of new technologies, specifically Artificial Intelligence and Semiconductors, in just seven years' time, by 2025. The Chinese authorities are planning to shift from a developing model based on a huge manufacturing sector and driven by low cost exports – “China as the factory of the world” – to a new model that is services-led and based on rising consumption and domestic demand: “China as the laboratory of the world”.

The growing presence of China in the Mediterranean: economic cooperation and investments

The attractiveness of Chinese investments has grown among European countries since the outbreak of the Euro crisis in 2011; over the last decade increasing Chinese investments have taken place in several Mediterranean countries.

Take the example of Greece, a country heavily hit by the financial crisis, where the acquisition of the Port of Piraeus by the Chinese shipping company Cosco in 2011 was a major relief for the public budget.

Intense competition between Mediterranean countries for attracting Chinese investments has emerged in recent years. In response to the Chinese maritime strategy of investing in several port infrastructures in the Mediterranean Basin, the Med countries on both the northern and the southern shore of the Basin are promoting themselves as a priority gate for inland countries and territories.

The increase of ship size of the main container carriers has had a significant impact on global maritime routes. In fact, not all Mediterranean ports are equipped to accommodate 19k to 21k TEUs ships and few of them can offer the required level of logistic efficiency and connection.

Moreover, in the view of Chinese authorities the presence of industrial zones, logistic facilities and tax-free areas serving port infrastructures can play a very important role in boosting the efficiency of the maritime industry and thus they are considered as positive factors by investors.

On the southeastern shore of the Mediterranean, Turkey has received significant funds to improve its infrastructures. The city of Kars, close to the border with Armenia, is the terminal of the BTK

(Baku-Tbilisi-Kars), a railway line linking Azerbaijan to Turkey through Georgia. This 838 km long line will shorten the usual route between China and Europe by 7,000 km. Near the Bosphorus Strait there are other big infrastructure projects linked to the BRI: the rail tunnel of Marmaray and the third bridge over the strait – the Tavuz Sultan Selim Bridge . The Turkish coastline is also a staging post to the Maritime Silk Road.

North Africa, thanks to its strategic position between the Middle East and Europe, plays an important role within the BRI project. The five countries of the area have different strategies concerning economic partnership and alliances within the African continent. While Egypt, Libya and – from last April – Tunisia are part of the COMESA (Common Market for Eastern and Southern Africa), Morocco joined the CEDEAO (Economic Community of West African States) in 2018 and Tunisia gained the status of observer member of this organization in November 2017. Algeria, on the other hand, joined the CEMAC (Central African Economic and Monetary Community) a choice consistent with the new Trans-Sahara Highway connecting Lagos in Central Africa to Algiers. The highway may serve as a strategic infrastructure to connect the southern shore of the Mediterranean to Central Africa.

All North African countries are directly involved in the Belt & Road Initiative, even if only Egypt has been part of the project since its launch back in 2013. Their geographic position on the southern shore of the Mediterranean is an asset for investors in ports and logistic facilities in the framework of the maritime silk road.

Following the “string of pearl” strategy for the maritime silk road, Chinese investors have planned to take control of a series of port infrastructures along the maritime route from southeast China to the Mediterranean through the Indian Ocean and Suez.

Complementarities between the Chinese strategy underlying the BRI project and North African countries are rather evident:

- Following the strengthening of commercial ties between China and Europe – which is among the main purposes of the BRI – the economies of the southern Mediterranean can play an active role within the supply and value chains that will be created.
- One of the priorities for Chinese authorities is to secure the energy needs of the country in the coming years, considering the expected sharp increase of China’s energy consumption. As it will be pointed out further on in this chapter, China focuses its energy strategy on the Middle East, and specifically on Persian Gulf countries, while investments in North Africa are mainly directed to the RES project.
- North African countries greatly need improved infrastructures to fuel their economic development and solve the strong imbalances between coastal areas and inland regions: this is a strategic issue for countries like Tunisia and Egypt where the lack of financial resources can open the way for Chinese investors; China, for its part, can use its overcapacity in the domestic building sector for infrastructure projects in Northern Africa.

Hereafter, a brief analysis of the specific potential of Morocco and Egypt in the framework of the BRI. These two countries seem to have the best chance of attracting Chinese investments due to their geographic position, business climate and political stability.

Morocco. Its geographic position – between Europe and West Africa, the Mediterranean Basin and the Atlantic Ocean – is strategic. The port of Tangier Med can serve as a regional hub for both Western Europe and Western Africa.

The trade agreements Morocco has signed with 55 countries, in particular with European countries and the US, represent another strong point of the Kingdom of which China can take advantage. Morocco is also the greatest investor in West Africa and the city of Casablanca has become the most important financial hub of the whole continent.

As regards transport infrastructures, the port system of Tangier Med – which includes a free zone and a series of industrial parks and logistic facilities – can boast maritime connections with more than 170 ports and 70 countries worldwide.

Economic cooperation between China and Morocco has recently improved: in May 2016 a strategic partnership was signed with 15 agreements between the two countries; on 17th November 2017 Morocco officially joined the BRI project. Following the II China-Africa Investment Forum that took place in Marrakesh in November 2017, Morocco and China signed a cooperation agreement for two economic projects: “Tangier Tech City” – aimed at building an environmentally friendly industrial city in the area of Tangier Med – and an electric transport system to be realized in Morocco by Chinese company “BYD Auto industry”.

Egypt is the biggest country in North Africa with a population of almost 100 million inhabitants, a figure higher than the rest of North African countries combined. The country lies in an enviable geographic position between the Mediterranean Basin, the Red Sea and the Middle East and, above all, it controls the Suez Canal, a strategic chokepoint between the Indian Ocean and the Mediterranean Sea.

In the framework of the Egyptian strategic view “Vision 2030”, the Government proceeded in the direction of improving the business climate of the Country through a series of legislative interventions: in November 2016 Egypt decided to allow its currency (the Egyptian Pound) to float freely on the currency market; in June 2017 the new law of investment came into force; last April the Government announced plans to cut fuel and electricity subsidies respectively by 19% and 48%. All these measures aim to attract foreign investors for infrastructural projects in the country. Chinese company China Harbor Engineering Company Ltd will cooperate with Egyptian companies in the construction of new logistic and industrial areas along the Suez Canal. On the occasion of the visit of President Xi Jinping to Egypt in January 2016 the two countries signed 21 partnership agreements with a total value of \$15 billion. The Chinese company “China State Construction Engineering Corporation” will cooperate to the construction of the new administrative capital 45 km east of Cairo, a project valued at \$45 billion.

In summary, following the Suez Canal enlargement, Egypt plans to take on the role of industrial and logistic platform for Chinese investments in the framework of the Belt & Road.

A short list of Chinese investment in some MENA countries (excluding Morocco and Egypt) can be seen in the figure below.

China's investments in the Mediterranean ports

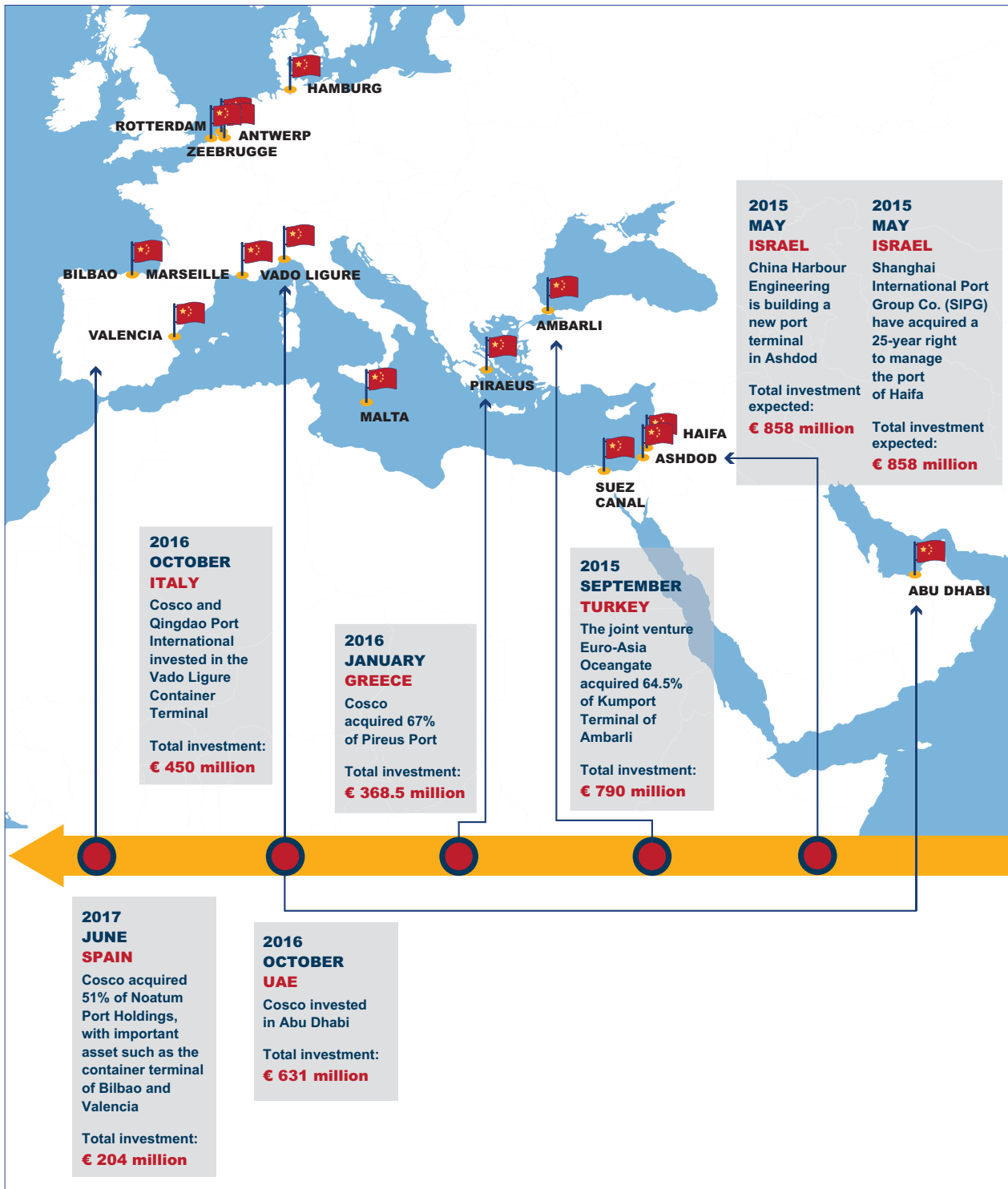


Figure 18 - Source: SRM

China and the MENA region: the energy dimension of the BRI

Based on some estimates, Chinese foreign investments over the last decade have reached \$630 billion. Two fifths of these investments have been devoted to energy projects. Besides, China has become the world's largest investor in Renewable Energy Sources (RES) both in its domestic and foreign energy markets.

As regards the oil market, Chinese domestic production has been constantly declining in recent years, down to 4 million barrels per day (mb/d) in 2016 and by 2040 is expected to fall to 3.1 mb/d (see Figure 19). On the other hand, China's oil consumption would increase by 35% in the forecast period, up to 15.5 mb/d by 2040.

Chinese oil consumption: domestic production and imports, 2016 and 2040

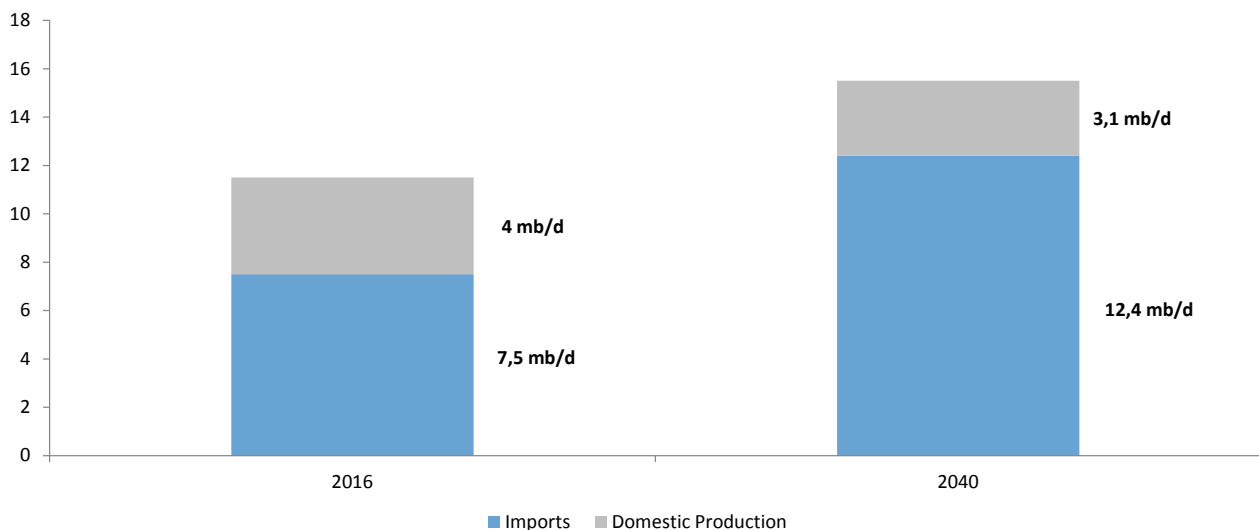


Figure 19 - Source: SRM on OECD-IEA "World Energy Outlook 2017", November 2017

China's strong dependence on imported energy has been always considered by the Chinese authorities as a weakness and vulnerability. Therefore, China decided to solve its energy dependency through overseas energy projects following its "going abroad" strategy in the framework of the BRI.

Moreover, two other factors of vulnerability for China's energy security have to be considered: the low geographical diversification of China's oil supplier and the chokepoints along the maritime route connecting China with the Persian Gulf and the Mediterranean: the Strait of Hormutz and the Malacca Strait in the Indian Ocean. China is the world's largest oil importer having recently surpassed the U.S.

As for geographical diversification, China increased its oil imports from Russia (from 6% to 14% of total oil imports) in the 2010-2016 period (see Figure 20).

Oil supplier countries of China, 2010 and 2016

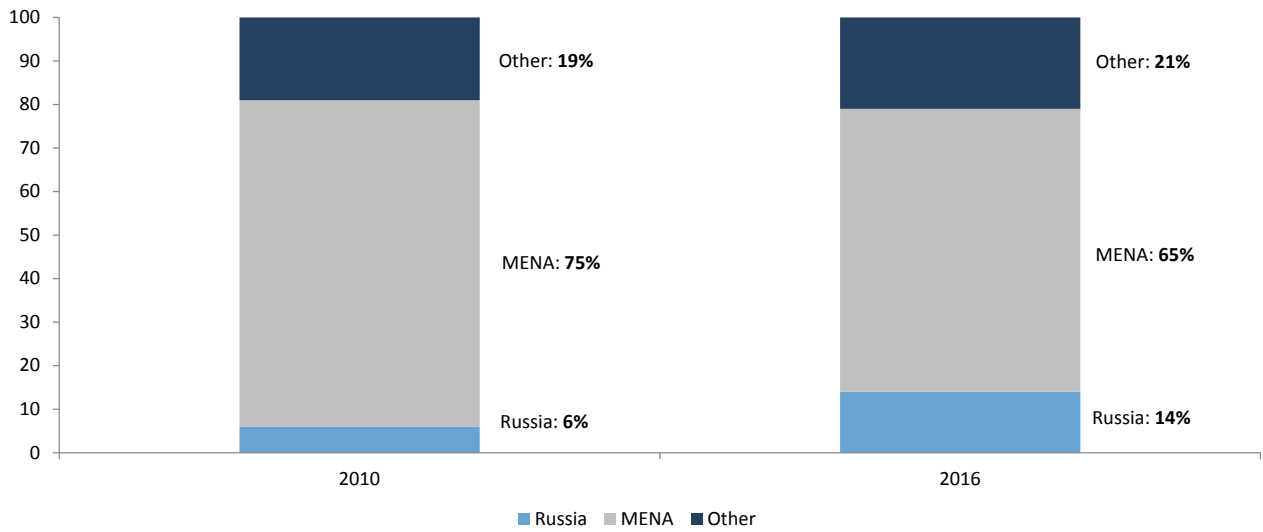


Figure 20 - Source: SRM on OECD-IEA “World Energy Outlook 2017”, November 2017

In the same period, China’s dependency on maritime transport for oil imports decreased but still remained high (see Figure below).

China’s Oil imports: the maritime routes in 2010 and 2016

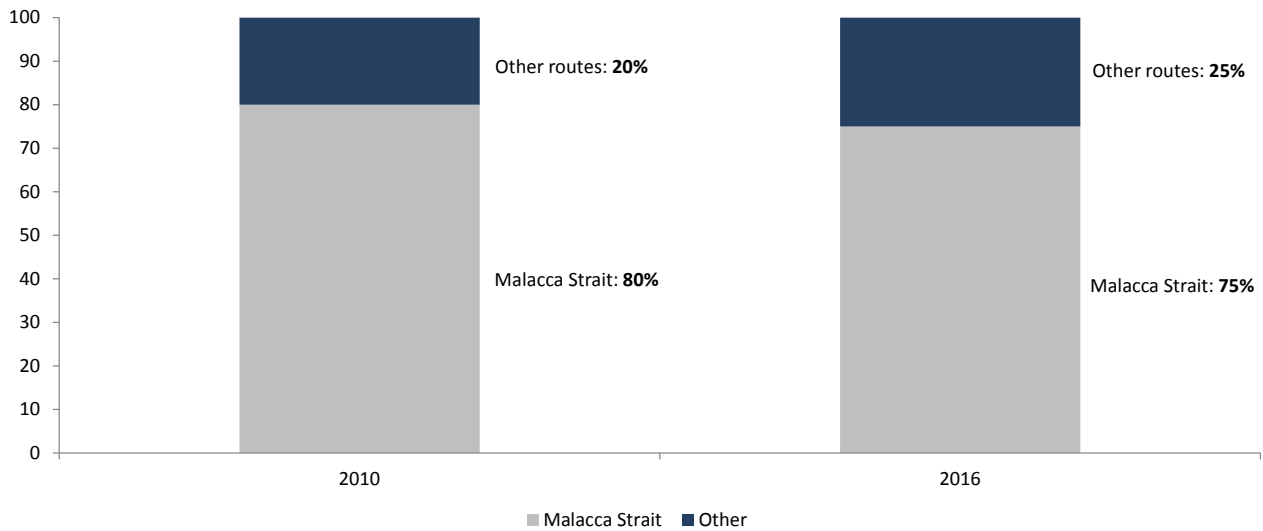


Figure 21 - Source: SRM on OECD-IEA “World Energy Outlook 2017”, November 2017

China’s gas imports (including both gas in general and LNG) are expected to grow much faster in comparison to oil imports. However, the volume of gas imports of China in the near future will depend on the extent to which China will succeed in exploiting its huge estimated shale gas reserves, being the largest in the world at 32 trillion cubic meters (15% of total world shale gas reserves).

China's gas Imports could increase from 73 bcm¹⁵ in 2016 (the fourth largest gas importer worldwide) to 280 bcm in 2040, making China the second largest gas importer in the world after the EU.

China's Gas Imports: LNG and via Pipeline

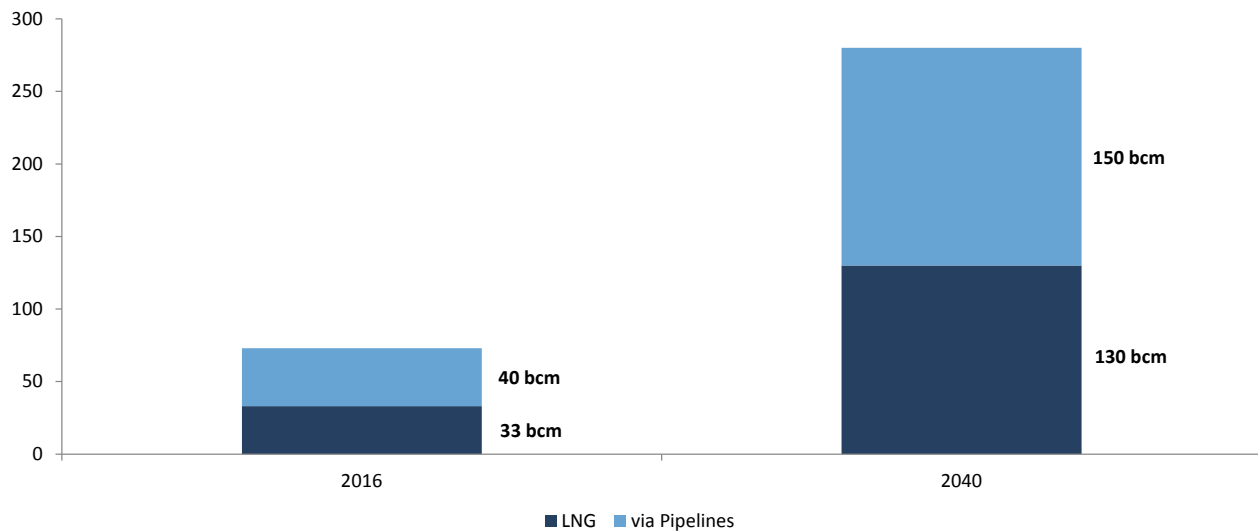


Figure 22 - Source: SRM on OECD-IEA "World Energy Outlook 2017", November 2017

The MENA region is by far the main area of origin for China's oil and gas maritime imports. As regards oil, the Middle East accounts for 52% of total Chinese oil imports, the share of Northern Africa is around 13% while the rest of Africa's exports to China cover 9% of total Chinese oil imports.

Saudi Arabia, the largest crude oil exporter worldwide, is also China's main importing source. Bilateral economic cooperation between the two countries is expected to grow given China's growing energy consumption. Relations and economic cooperation with Qatar are also expanding, considering that Qatar is the largest LNG exporter worldwide.

While China has focused its oil and gas import strategy on the Middle East, particularly on the Persian Gulf countries, due to its geographic position and proximity, security reasons dissuade China from expanding its imports from North Africa because any oil or LNG imports from the region has to be shipped through the choke point of the Suez Canal and along the coast of the highly instable Yemen, where a civil war is ongoing.

Over the period 2000-2017, total Chinese energy financing in Africa amounted to almost \$ 35 billion, a lower amount compared to Chinese investments in the other continents, accounting for just 15% of total energy financing. Moreover, the main African target countries for Chinese energy financing in Africa are Angola, Nigeria, Zambia, Uganda, South Africa and Sudan: these countries

¹⁵ Billion cubic meters.

have received around \$24 billion while the rest of Africa combined only \$11 billion.

In fact, China's investment interests in North Africa are focusing mostly on renewable energy projects.

Let us have a look at some important energy projects in Northern African countries that might raise the interest of Chinese investors.

Morocco. Even if the Kingdom appears politically more stable than most of the other North African countries, the risks of political instability are increasing due to the younger generation's increasing demands for more democracy and economic equality. As for RES projects, Morocco is building the world's largest and most modern concentrated solar-power plant covering an area as large as the city of Paris. Thanks to this new power plant, Morocco might become a net exporter of energy in the near future, a great change compared with the current situation of the country that has to import 97% of its energy needs. Morocco aims to cover 42% of its energy needs thanks to RES by 2020 and 52% by 2030.

Algeria. The country is the largest gas producer in the African continent and 90% of its gas exports go to Europe; Algeria is the third supplier of gas to Europe, through pipeline. Algeria has planned to increase its oil and gas production to meet rising domestic demand and for exports, but is facing budgetary problems to finance these projects because of declining international prices of oil and gas in recent years. Therefore, it urgently needs regulatory and market reforms to attract foreign investments to finance its energy investments in traditional energy sources, as well as in RES projects which are still poor in size.

Tunisia is a net importer country of energy products relying on limited oil and gas reserves. With reference to the RES project, Tunisia plans to increase the share of RES from 3% to 30% by 2030 by investing in wind and solar plants.

The conflict going on in **Libya** is curbing the prospects of a rise in the national oil production. In 2017 domestic production totaled 0,7 mb/d that is less than half of the domestic oil production before the 2011 revolution against Muammar Qadhafi (1.6 mb/d). The lack of political stability is thus threatening to keep potential investors at bay.

The energy scenario in **Egypt** is dominated by the discovery of the offshore Zohr gas field in the Mediterranean, which, together with other new gas fields such as West Nile Delta, Atoll and Nooros, can boost Egyptian gas production and make Egypt a net exporter of gas in the mid-term perspective. As already pointed out, another positive factor in the view of potential investors is the improvement of the national business climate for investments, thanks to the new investment law that came into effect in June 2017. These circumstances suggest that the country might become a Mediterranean hub for gas and crude oil exports to Europe in the near future, raising the interest of investor countries and companies in the framework of the BRI. Besides, the government of Egypt plans to boost investments in the RES project by expanding its solar and wind capacity.

Suez Canal Economic Zone

The Suez Canal Economic Zone (SCZone) is a world-class free zone and trade hub along the banks of the newly-expanded Suez Canal. The zone is strategically located on the main trade route between Europe and Asia where more than 8% of global trade passes through every year. It is planned to be built over a 461 km² area, almost two-thirds the size of Singapore, consisting of two integrated areas, two development areas and four ports. The zone is regulated by a special legal framework that avoids bureaucracy and supports investors. In November 2017, the SCZone signed new investment deals, worth USD40 billion, with foreign and local investors and developers and 2018 also witnessed the signing of mega industrial projects, especially in the petro-chemical sector. Ongoing infrastructure projects are also being implemented to enhance the capacity of the SCZone.

The Suez Canal Economic Zone

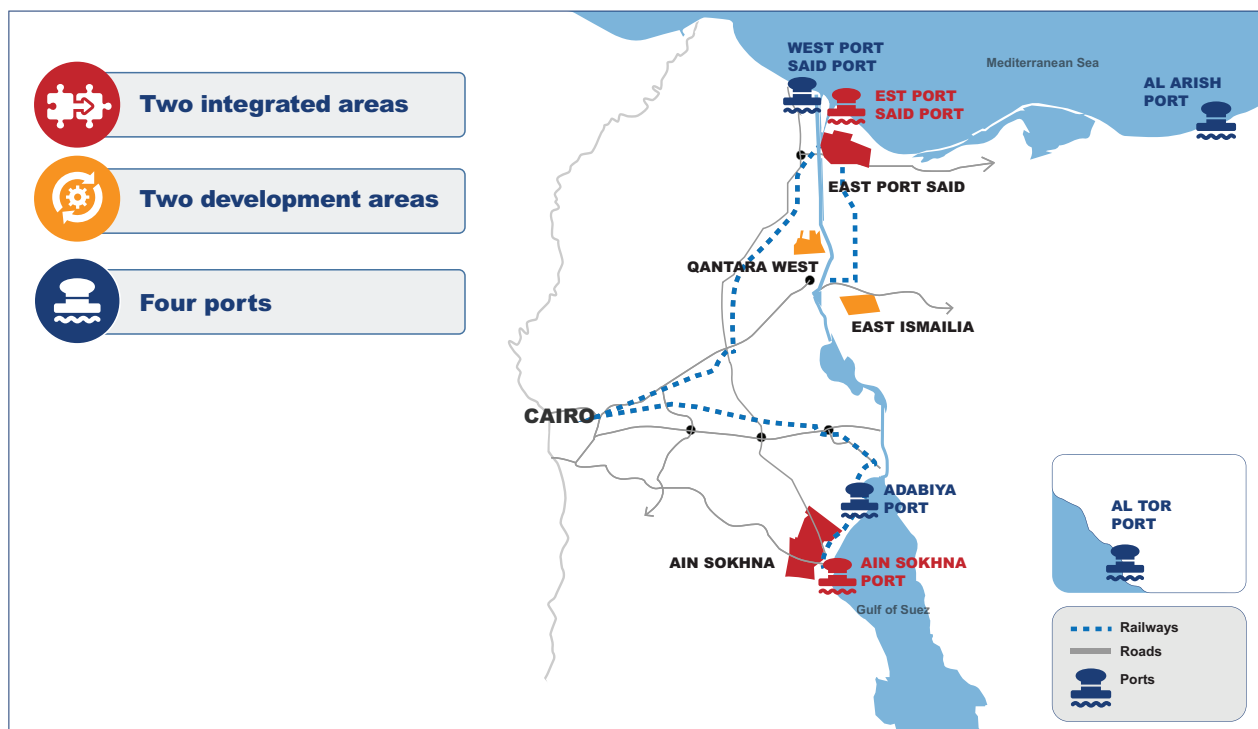


Figure 23 - Source: SRM on SCZone

Integrated areas

Ain Sokhna

A major industrial and logistics hub at the southern gateway to the Suez Canal, combining port facilities, industrial zones, residential areas, and excellent road and rail linkages to Cairo and the city of Suez. More than 162 km² of Ain Sokhna's total 210 km² are earmarked for manufacturing. The area is designed to accommodate heavy, medium and light industries, as well as commercial facilities. Real estate development opportunities exist for building residential communities. Suitable maritime-related activities include ship building and repair services, bunkering, vessel scrapping and recycling.

Ain Sokhna - List of proposed industrial uses

Industrial Uses
Oil Refining
Chemicals & Petrochemicals
Automobile Assembly Parts
Construction Materials
Agri-Business & Food Processing
Textile & Ready Made Garments
Home Appliances & Electronics
Pharmaceuticals
ICT

Table 8 - Source: Alex Bank

Ain Sokhna Port

A major international gateway port for Egypt, the Arabian Gulf and Asia, Ain Sokhna Port is located on the western coast of the Gulf of Suez, 43 km south of the city of Suez. Covering an area of 22.3 km², it has a depth of 18 m. Due to abundant surrounding land, the port is fast becoming a major industrial hub serving international and domestic markets. Expansion plans include new container terminals; dry bulks and general cargo terminals; liquid bulk terminals; logistics, warehousing and distribution centers; and a dry port. Further investment is geared toward port automation and state-of-the-art container handling equipment.

East Port Said

Currently being developed into a major transshipment center with a multi-modal logistics center, this area occupies 75.5 km² adjacent to the East Port Said Port. With planned and existing urban communities in the immediate vicinity, 40 km² of the area are earmarked for medium and light industries, and commercial activities. The expansion of East Port Said Port in the northwest part of the area is spurring industrial development and creating opportunities for water desalination and power plants, as well as in road network expansion. Real estate development opportunities include residential projects in East Port Said and Bardawil, some with sea views.

East Port said - List of proposed industrial uses

Industrial Uses
Automobile Assembly Parts
Construction Materials
Agri-Business & Food Processing
Textile & Ready Made Garments
Home Appliances & Electronics
Pharmaceuticals
ICT

Table 9 - Source: Alex Bank

East Port Said Port

A main international and domestic transshipment hub at the northern entrance of the Suez Canal. East Port Said Port is known for its sheltered deep-water facilities that allow it to accommodate large vessels, rendering it among the world's top 40 busiest ports and growing. Proposed expansions, covering 26 km², will provide a wide range of port and logistics development opportunities and increase the port's total area to 70 km².

Development areas

Qantara West

A new residential community with light industry and logistics centers easily accessible to the Suez Canal. Located close to farmland 30 km north of Ismailia on the road to Port Said, Qantara West benefits from proximity to the fertile Delta and is ideal for agribusiness. Currently, 13.6 km² are available for development in an area well supplied with water, electricity and sewage. Suitable logistics enterprises include warehousing and fulfillment services, transportation and distribution, freight forwarding, Pick & Pack, to name but a few.

East Ismailia

A new center for high-tech industries, as well as educational and scientific research institutions, East Ismailia is located 10 km east of the Suez Canal and covers an area of 71 km². With excellent electricity and water supply, East Ismailia offers ample prospects for light and medium industry, research and development facilities, as well as commercial ventures and services. A tunnel is currently under construction to link East Ismailia with the Egyptian mainland, greatly decreasing east to west transportation time.

Ports

West Port Said Port

- A well-established transshipment port on the key global sea route between Europe and South Asia, West Port Said Port occupies 2 km² at the northern entrance of the Gulf of Suez from the Mediterranean Sea.

Adabiya Port

- Located in the upper part of the Gulf of Suez on the Red Sea, Adabiya Port has the potential to be a gateway port for large volumes of dry bulks.
- According to master plan, the suggested developments targets are:
 - Dry Bulk terminal: 650 m/Depth 14.0 m
 - Liquid Bulk terminal: 650 m/Depth 14.0 m
 - General Cargo terminal: 250 m/Depth 14.0 m
 - Container terminal: 900 m/Depth 17.0 m

Al Tor Port

- A strategic port for South Sinai occupying three hectares on the eastern bank of the Gulf of Suez, south of Abu Zenima.
- The majority of exports from Al Tor Port are minerals and dry bulks. This commercial port includes terminals for dry bulk cargo, general cargo and containers as well as fishing boats and a marina.

Al Arish Port

- Located on the shore of the eastern Mediterranean Sea with docks stretched over 40,000 m. Active as a cargo, fishery and tourist port, Al Arish Port plays a crucial role as an industrial and commercial port for North Sinai and Gaza.

Legal framework

- The SCZone is regulated by the Egyptian Law No.83 for 2002 and its amendment of 2015.
- The General Authority of the Suez Canal Economic Zone is in charge of management and development, as for decision-making and regulatory powers, the board of directors has the authority of the Egyptian cabinet of ministers within the SCZone.
- Companies can be 100% foreign owned as long as they are registered and licensed as Egyptian joint stock companies.
- There is no capital requirement for investors, but must show evidence of funding and business plan to obtain license within the zone.
- The land in the zone is for lease and the investor have the right over the land for up to 50 years. Lease prices differ due to the location of the land and the development areas.
- Registering and obtaining a license, investors must submit an application for the general authority. Once approved, lands and buildings permits will be issued and it will be completed in three days. The fees of the license vary according the type of license requested. Environmental impact assessment is needed while registering and it is reviewed by the general authority of the SCZone and not the Egyptian government.
- The corporate tax rate is 22.5% for doing a business in the SCZone.
- Each project's income tax is 10% of its net income, with the exception of the income derived from the salaries of project employees, which is taxed at a rate of 5%
- The machines, raw materials, spare parts and components necessary for the authorized activities in the economic zone may be imported without permit and are exempt from customs tax, sales tax and all other taxes and duties. The products of those establishments may be exported without permit. They are subject to the customs tax, sales tax and other taxes and duties only

on the imported components of those products when they enter the local Egyptian market.

- Profit can be sent back to the countries of these companies, due to no restrictions on financial transaction in any currency within the SCZone.
- Foreign employees working for any company must not exceed 10%, some cases may have an exception but it must be approved by the board of directors.
- The projects operating in economic zones may not be subject to nationalization, nor may they be subject to sequestration, freezing of assets or confiscation (except by a judicial judgment).
- Projects are entitled to decide on the prices of their products and services without governmental interference.

Why to invest in the SCZone?

Unique geographical position

Strategically located on the main trade route between Europe and Asia, where more than 8% of global trade passes every year.

Access to large markets

Multiple port facilities and preferential trade agreements with major trade blocs ensure access to 1.8 billion consumers in Europe, Asia, the Middle East and Africa. The Egyptian domestic market of almost 100 million people is also within easy reach.

Skilled & affordable labor

Egypt has the largest labor pool in the region and is a net exporter of educated skilled labor. The workforce includes experienced accountants, lawyers, ICT specialists, engineers, technicians and designers, all available to work for SCZone companies at competitive wages.

Business friendly process

The SCZone board of directors has designed a business-friendly process for investors to quickly register and receive licenses, as well as obtain permits related to land, buildings and labor.

Infrastructure and logistics

State-of-the-art energy, water, waste management, telecommunication, and transport facilities ensure the smooth functioning of the SCZone. Excellent roads, railways and six strategically-located ports place SCZone companies ahead of the competition.

Supportive legal framework

Companies can be 100% foreign owned / Machines, raw materials and spare parts necessary for the activities in the zone may be imported without permit and are exempt from customs tax, sales tax and all other taxes and duties / No restrictions on transferring profits to parent companies.

Infrastructure, logistical & industrial projects

2017 Projects

In November 2017, the SCZone signed new investment deals, worth USD40 billion, with foreign and local investors and developers:

- **DP World:** Developing an industrial and residential zone at Sokhna in Egypt over 95 km² as well as the development of Sokhna Port. The project is anticipated to create more than 400k jobs.
- **Egyptian Steel:** Constructing a steel plant at Sokhna, with a total production capacity of 2.3 million tons per year. The project targets generating 6k jobs.
- **China COSCO:** Establishing a Logistics Park at Sokhna (Chinese TEDA Industrial Zone) to enrich the supporting logistic facilities there.
- **East Port Said Development Co.:** Developing and managing the industrial zone in East Port Said, with a total area of 16 million m².
- **Polaris Alliance:** The industrial development of 5.5 m² at Sokhna to attract USD3.5 billion investments and generate 100k job opportunities.
- **Sonker liquid waste disposal project at El-Sokhna Port:** with direct foreign investment of USD500 million, and by the end of all phases of the liquid casting plant, the economic zone of the Suez Canal will become a regional center for the supply of ships and the trading of petroleum products in the Middle East and East Africa.

2018 Projects

- Carbon Holdings has launched a USD10.9 billion world-scale petrochemicals complex to be located in the heartland of Egypt's oil and gas industry.
- The petrochemicals complex consists of a naphtha cracker unit, associated derivatives units, three polyethylene units, three polypropylene units, and off sites and utilities. It will be owned and operated by Tahrir Petrochemicals Corporation (TPC), an Egyptian company established by Carbon Holdings in 2011.
- TPC will produce 1.5 million MTA (metric tons per annum) of ethylene which will be converted into 1.35 million MTA of high density polyethylene and Linear low density polyethylene, 880,000 MTA of polymer grade propylene, 880,000 MTA of polypropylene, 250,000 MTA of

butadiene, 350,000 MTA of benzene and 150,000 MTA of gas oil. These products can service domestic downstream consumption in Egypt as well as global demand. Upon completion, TPC will supply all of the required propylene feedstock to OPC. As a producer of essential intermediate petrochemical building blocks, it will also create opportunities for further industrial development in downstream sectors such as those producing electronics, cables, high impact injection moulding and tires.

Other achievements

- Successful negotiations on the return of Mercedes to the Egyptian market and the initial agreement on the allocation of an area of 50 km² for the establishment of logistic center for the redistribution of cars and industries feeder for Mercedes in Ain Sokhna in the Suez Canal Economic Zone.
- Successful negotiations on the return of the five shipping lines to work in East Port Said Port after their withdrawal in April 2017 against the backdrop of resolutions 448 and 800 on the organization of activities and increase fees for maritime activities in the port.

Industrial zones

Russian Industrial Zone

- The Russian industrial zone is going to be built in East Port Said for logistics industries.
- The Project's total area is 5.25 km², of which 2.8 Km² are industrial buildings, while the rest of the area will be used to establish residential, commercial and recreational complexes for the workers in the region.
- Total investments are estimated at USD6.9 billion.
- The zone is expected to generate 35k direct and indirect job opportunities.
- Financing projects to be established in the industrial zone through the Russian Fund for Direct Investment and a number of Egyptian banks.
- The first stage in 2018 will be the development of 1 km² by the Russian industrial developer, in which 7.3k jobs will be provided in the fields of construction and construction, with the Russian industrial developer working in parallel to attract Russian companies and investors during 2018 and 2019 years.
- With the completion of the first phase, the development of an area of 1.60 km² will begin as a second phase of the total area of the region and provide 10k jobs, which will end in 2022.
- The development of an area of 2.65 km² to end the implementation of the region in 2031, after 13 years as agreed.
- The two sides agreed to the establishment of a company to operate the region, "Moscow Economic Zone".

- The most important industries to be established within the Russian region are manufacturing of sensors, air conditioners and motors, building and construction equipment, glass and ceramics, as well as wood and paper industries, feeder industries for vehicles and tires as well as hardware, medical and plastic industries.

Chinese Industrial Zone

- In 2013, Chinese TEDA Corporation signed a 45-year development agreement with the SCZone to establish investment projects in an area spanning 6 km² in the industrial zone, and an additional 1.23 km² was contracted after that to make a total of 7.23 km².
- TEDA Chairman confirmed that USD600 million were invested in a total of 38 projects. The Chinese work as an investor developer, for an example; they invited China Glass Holdings to establish a fiberglass plant in the SCZone.
- China COSCO is to invest in the international customs warehouses in the area of TEDA Industrial in Ain Sokhna on an area of 130 km², with a total investment of USD25 million.
- During his last visit to China, President Abdel Fattah Al-Sisi Signed an agreement to launch a Chinese textile city in the SCZone among other Chinese projects in the zone with total investments of USD1.1 billion.

Infrastructure projects

- Egypt is going to inaugurate 4 tunnels connecting the two sides of the Suez Canal by the end of 2018, to facilitate transportation.
- The SCZone is going to finish the establishment of 5 km berths by the end of this year in East Port Said Port.

Bibliography

- EIA - U.S. ENERGY INFORMATION ADMINISTRATION (2017), *World Oil Transit Chokepoints*.
- GIANNOTTI O., GIORDANO A. (2018), *Il Mar Mediterraneo. Scenari geo strategici della portualità italiana nel quadrante Mediterraneo – Mar Nero*, Assoport.
- HILLMAN J.E. (2018), *How Big Is China's Belt and Road?*, April 3, 2018, Center for Strategic and International Studies.
- OECD-IEA (2017), *World Energy Outlook 2017*, November 2017.
- SRM (2018), *Italian Maritime Economy. China, energy corridors, ports and new routes: geomaps of a changing Mediterranean, 5th Annual Report*, Giannini, Naples.
- STEINBOCK D., "How the Belt and Road could change the 21st Century", *China Daily*, May 15, 2017
- SUEZ CANAL AUTHORITY, *Navigation Circulars*, www.suezcanal.gov.eg
- SUEZ CANAL AUTHORITY, *Statistical Database*, www.suezcanal.gov.eg
- SUEZ CANAL ECONOMIC ZONE, www.sczone.eg
- TAJE M. (2018), "Les nouvelles routes de la soie et l'Afrique du Nord: Quelles synergies?", *Programme Régional Dialogue Politique Sud Méditerranée*, Konrad Adenauer Stiftung.
- UMBACH F. (2018), "China's Belt and Road Initiative and the Mediterranean Region: the Energy Dimension", *Mediterranean Dialogue Series*, No. 14, Konrad Adenauer Stiftung, June 2018.
- WORLD BANK, *Database*.
- UNCTAD (2017), *Handbook of Statistics*.
<https://unctad.org/en/Pages/Publications/Handbook-of-Statistics.aspx>
- UNCTAD (2018), *Maritime transport indicators*.
- UNCTAD (2018), *Review of Maritime Transport 2018*.
<https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=2245>
- WORLD BANK (2018), *International LPI database*.
- WTO, (February 2017), *Maritime Transport Connectivity*, Geneva.
https://www.wto.org/english/tratop_e/devel_e/a4t_e/s1Jan_Hoffmann.pdf

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economy