INFRASTRUCTURES AND POWER IN THE MIDDLE EAST AND NORTH AFRICA

S. Colombo, E. Soler i Lecha (Eds.)

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Infrastructures and Power in the Middle East and North Africa

Why Infrastructures Matter and How They Reflect Global and Regional Geopolitical Shifts in the Mediterranean and the Middle East and North Africa

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Geopolitics is back. A more aggressive great power competition and the disruptive effects of new technologies have given new impetus to the analysis of the impact of geography on political decisions.

Over the last decade, the Mediterranean and the Middle East and North Africa (MENA) region have experienced profound and far-reaching social, political and economic transformations that have contributed to unprecedented levels of volatility and uncertainty. Some of these shifts have reshaped many of the traditional features of the geopolitical order in place in the region for decades, while others might have the potential to do so in the near future. Increased competition among regional actors but also new stakes by emerging global powers are redefining the contours of regional geopolitics and the way in which this region relates to broader global trends. Infrastructures is one of the areas where the effects of those global and regional dynamics are more visible and this is why a good grasp of the geopolitics of infrastructures can help us understand the broader geopolitical shifts in the Middle East and North Africa better.

This is the main goal of this Joint Policy Study that ultimately aims to fill a gap in the scholarly work on the Mediterranean and the MENA region by delving into issues of geopolitical competition, conflict and cooperation from the point of view of the use of strategic infrastructures. This exercise continues and complements other collective endeavours, namely the MENARA project, which have sought to make sense of the acceleration of changes in the region since 2011 and have analysed them as a continuation of pre-existing trends and as part of larger transformations at a global scale. The geopolitical relevance of infrastructures is nothing new, as evidenced by the centuries-old competition for control of some strategic passageways such as the Strait of Gibraltar, the Bosphorus and the Dardanelles, the Strait of Hormuz, the Straits of Tiran or the Suez Canal. While acknowledging some constant features, our analysis also takes into consideration the impact of new trends at the global and regional levels. Moreover, while the study of infrastructures has been a key feature in classical geopolitics, there are aspects often associated with critical geopolitics – the geopolitics of cooperation and the relevance of actors other than states such as transnational corporations, cities or civil society groups to provide a few examples that stand at the core of our analytical approach to the topic.

Our analysis of the geopolitics of infrastructures is based on the assessment of the impact of major global and regional trends. Globally, connectivity and digitalisation are two trends that seem irreversible. As a result of globalisation and technological enablers, individuals and production centres are increasingly connected through physical and

virtual networks. Ensuring control over the means of transporting goods and information has become as important as territorial control, if not more so. Covid-19 has introduced some nuances, as a lively discussion is going on about the possibility of de-globalising trends, the end of the offshoring era and the need to shorten the supply chains, which can have massive implications for infrastructure development projects. If this happens, it would increase the relevance of infrastructure projects in the MENA region. Regarding the effects of digitalisation and, more broadly, what is often referred to as the fourth industrial revolution, the most important one is that virtual infrastructures and the control of cyberspace have become as critical as ports, bridges or roads. This has altered the strategies of actors whose task is to protect national security or global goods as well as the priorities of those who try to disrupt them. Globally, other trends to take into account include the process of de-carbonisation due to greater environmental awareness and the impact of climate change, and rapid technological changes in the efficiency and cost of clean energies. This will have major effects when it comes to the centrality of energy infrastructures such as pipelines or refineries and will also alter maritime trade routes. Although this is a global trend, its effects will be felt harder in the MENA region due to the weight of hydrocarbons in the economies of many of its countries. Finally, this study also takes into consideration global power shifts and, more specifically, the rise of non-Western powers in the geopolitics of the MENA region. The role of China and Russia in the Middle East is now more visible than 10 years ago, and India may also become a relevant player in the decades to come. In all these contexts, infrastructures – military or civilian, physical or virtual – play a major role.

This study of power and infrastructures then reflects the impact of major regional dynamics in three respects. First, together with global power competition, we have witnessed more acute regional rivalries and the formation of antagonistic coalitions of regional and extra-regional actors. Traditional and new aspiring regional powers have resorted to infrastructural projects to project strength, increase their influence and/or build special relations with global powers. This study provides many examples of this trend. Second, another feature is the fact that the limits of the region are increasingly blurred. There has never been an agreement on where the MENA region starts or ends, there is no consensual definition on who is in and who is out. Yet, in recent years, the interconnections between the Maghreb and the Sahel and the whole idea of the existence of a Red Sea region that includes part of the Middle East and the Horn of Africa is changing the way in which many aspects are being discussed. Infrastructures is one of the clearest examples and at the same time a key driver of this trend. Finally, a third trend shaping regional geopolitics is militarisation, resulting from traditionally robust and politically meaningful security apparatuses, a growing arms race and the proliferation

of conflicts across the region. In light of this trend, the synergies between civilian and military maritime infrastructures and the weaponisation of the digital space are issues that are worth exploring.

Although in the MENA region infrastructures are generally associated with tension, rivalry and conflict, they could also be a catalyst for de-escalation, cooperation and peace. Region-wide infrastructure development can reduce energy costs, diversify clients and suppliers and attract Foreign Direct Investments (FDIs). Under certain conditions, infrastructures could even be approached as a confidence-building measure and actors such as the European Union (EU) could provide a positive and constructive contribution to reinforce "cooperative geopolitical thinking" over the conflictual one that currently dominates the debate by investing in infrastructures.

In this domain, the EU could bring an added value in view of its own track record of making use of critical infrastructure to foster cooperation and integration among its member states. From grids and cables to routes and transport networks, the level of interdependence reached by the European countries when it comes to infrastructures is one of the EU's greatest achievements as well as one of the most important enablers of the free movement of goods (both material and immaterial) and people. Turning to the external dimension, infrastructures do play a fundamental role in the context of the EU's relations with its partners and neighbours. As such, they also powerfully point to the EU's dependence on the good functioning of critical infrastructures for its own security and development.

In light of geographical proximity and of functional cooperation patterns, MENA infrastructures create both opportunities and challenges for the EU and its member states as a result of the regional and global trends recalled above. First, critical infrastructures in the region – such as pipelines, digital cables, ports and hinterland facilities – represent strategic assets to leverage EU-MENA cooperation as well as potential sources of tension due to conflicts, tensions and regional and international competition around them. The EU and its member states fear major disruptions in critical infrastructures in the MENA region as these can endanger the security of their citizens, their production and their economies. Energy and transport infrastructures, such as ports, maritime highways, pipelines, grids, off-shore and on-shore oil and liquefied natural gas terminals, and maritime choke points in the region are increasingly vulnerable to disruptions due to conflicts and geopolitical tensions, first and foremost those centred on the Gulf region. This in turn has repercussions for Europe. Similarly, the EU faces the competition of China to its economic interests and rule-based form of governance, which also exploits

infrastructures in the MENA region as a key battlefield. Second, some of these domains are fairly new for the EU itself as it is still struggling to develop cutting-edge legislation and adequate tools to deal with the challenges stemming from the infringement of European citizens' or firms' rights when it comes to the use of such infrastructures. The cyber domain is probably the most glaring example of fast-paced changes that have not yet been matched by adequate legislative and policy responses at the EU's multilateral level.

Against this backdrop, the geopolitics of infrastructures in MENA countries does create a number of challenges for the EU. At the same time, it also opens up concrete opportunities to move from conflict to cooperation and from fragmentation to integration. First, infrastructures do allow cooperative logics to be fostered when ideological and political conflicts are tamed. Building once again on the EU's own successful history of integration starting from the development and sense of ownership for common infrastructures, the EU could broker cross-border infrastructural projects as a way to de-escalate tensions and to cultivate common ground based on concrete interests. Second, dealing with infrastructures in the MENA region allows a variety of players at the EU level, including supra-national institutions, national authorities, private businesses and civil society groups, to be placed at the crossroads of unstoppable regional and international dynamics such as de-carbonisation, the technological leap, the rise of China and the shift in the centre of gravity of the region towards the Gulf.

Grasping these opportunities can only happen if the EU becomes more serious about its willingness and ambition – spelled out by the new President of the European Commission Ursula von den Leyen – to be a geopolitical player. In the MENA region, this means cultivating a broader geopolitical vision that entails the use of instruments and policies tackling (potential) conflicts at their roots, not only to prevent them but also to manage – and try to put an end to – the violence and disruption they carry with them once they are set in motion. In a nutshell, it means playing a more robust geopolitical role through conflict resolution next to crisis management, which the EU is already doing. In this way, the EU would be more equipped to manage the geopolitical relevance of infrastructures in the MENA region, to respond to the challenges they pose in terms of power competition and conflicts, and to grasp the opportunities they provide for connectivity, development and peace.

In conclusion, the EU is well placed to build upon its current and future strategies to contribute to the sustainable and peaceful growth and use of infrastructures in the MENA region, boost private-public partnerships and improve multi-stakeholder cooperation, as

well as create incentives for cooperation and convergence. A regional approach to deal with issues related to the geopolitics of infrastructures in the MENA region will be key to success as trade, investment, energy and connectivity policies can be more strategically and successfully leveraged within the EU foreign policy toolkit towards the region. The current pandemic will delay such developments but will not stop them altogether, as the EU and its member states appear busy with striking a balance between addressing the current health and economic emergency situation and remaining firm in their commitments to greater geopolitical cooperation and sustainable development vis-à-vis the highly strategic MENA region.

To explore these issues, this Joint Policy Studies is made up of four chapters, each of which provides a broad overview of recent developments in a specific domain of the geopolitics of infrastructures in the MENA region as a whole while also focusing on one or more case studies. The dimensions assessed include: the challenges for each type of infrastructure, the players involved (both at the regional and global levels), the dynamics of power resulting from their interplay, instances of regional cooperation or conflict, and the implications for the EU and its policies and instruments to deal with these infrastructures for the peaceful development of the MENA region. The four specific domains of the geopolitics of infrastructures addressed in the four chapters are: 1) maritime infrastructures with specific attention to ports and the rising competition of China, 2) energy infrastructures and geopolitical conflicts in the Eastern Mediterranean, 3) MENA flag carriers as instruments of soft power, and 4) the geopolitics of virtual spaces and cyber competition in the Gulf. They have been chosen as they cover a wide range of interconnected issues around traditional as well as relatively new kinds of infrastructures. The distinct geographical scope of the four chapters allows sub-regional dynamics in the Western and Eastern Mediterranean, the Middle East and the Gulf to be covered.

The Mediterranean Sea and its Port System: Risk and Opportunities in a Globally Connected World

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Over the past 25 years, the traditional strategic position of the Mediterranean Sea on global maps has been boosted: with a 477% growth in the amount of cargo handled by its ports between 1995 and 2018, the Mediterranean region currently serves 20% of global shipping (SRM – Studi e Ricerche per il Mezzogiorno, 2019). As of today, there is no alternative route as efficient as the Mediterranean Sea to connect Asia to Europe. Arguably, ensuring this passageway amidst ongoing security tensions in the Persian Gulf will be one of the most pressing security concerns for both continents in the years to come.

The enhanced centrality of the Mediterranean and its ports creates growth opportunities for the region and for the wider European and African markets that it connects: not only in the shipping industry but also in economic sectors that flourish around well-functioning and well-connected infrastructure. Some countries have been savvier than others in recognising this early on: within the region the case of Morocco putting its port system at the core of economic revitalisation is notable while among foreign investors, China is the most actively involved and eager to sustain long-term investments.

Yet the Mediterranean is only partially benefitting from existing economic opportunities. This is partly due to poor port development strategies by Mediterranean countries and lack of interest in investing economic resources. It also needs to be assessed against the background of developments in the shipping industry globally, particularly the increased market share of transshipment – that is the shipment of goods to an intermediate destination, then to another destination. The spike in transshipment activities has raised the strategic importance of the Mediterranean Sea (i.e. the intermediate destination) as a connecting market but tends to serve the global more than domestic market, and particularly the world's largest exporters rather than the countries where transshipment hubs are located.

This partially explains why the Mediterranean is so importantly placed within the Chinese Belt and Road Initiative (BRI). Today, growth and degrowth of maritime traffic in the Mediterranean – and the infrastructural system that sustains it – is highly dependent on sustained and robust trade flows along the East-West route. The current pandemic caused by the outbreak of the Covid-19 virus has heavily impacted it, showing the degree of vulnerability of Mediterranean ports and their dependency on international trade, and China's exports. Global container volumes are down between 8-10% since the beginning of the crisis, and imports from Asia have lowered between 10-15% (Notteboom, 2020). Further disruption in international trade flows is likely to halt, at least temporarily, the pattern of growth that Mediterranean ports have experienced in recent years.

Mediterranean Port System

The Mediterranean basin has naturally been a crossroad of moving goods and people, whose travels and encounters have created the distinct cultural and social concept identified with the word "Mediterranean". Historically, the creation of the Suez Canal in 1869 was a turning point in the history of the Mediterranean: the Suez Canal helped to reverse the process of marginalisation that the Mediterranean had been undergoing since the 16th century in favour of the Atlantic Ocean and placed it at the core of one major trading route. The Mediterranean Sea then became the easiest and cheapest transport route between Asia and Europe.

The advent of containerisation in the shipping industry about a century after turned the region into a mandatory passage of world trade: today, between 7% and 8% of total cargo traded globally travels through the Suez Canal (Baccelli, Buonfanti, Ferrara & Zucchetti, 2015). The containerised method of moving goods and related maritime and inland transport systems have proven instrumental to globalisation, in a way that made these two processes greatly intertwined: the introduction of containerisation has made the costs of moving goods across the planet 20 times cheaper than before (Comtois & Rodrigue, 2020), thus allowing the emergence of global value chains (GVCs). In turn, trends in global trade, and the shifts and expansion of GVCs, now determine the direction of investments in transport geography, favouring the economic development of one region or another (Notteboom, 2012). The rise of Asian economies, particularly China, as global trade giants has made the trans-Pacific route, followed by the East-West route, the busiest maritime corridor in the world – the trans-Atlantic corridor comes third (SRM – Studi e Ricerche per il Mezzogiorno, 2018). Therefore, the Mediterranean region has experienced tremendous growth in investments in the maritime sector over the past two decades, becoming a logistics platform of great strategic importance for the East-West trade route – connecting Asia, Europe and the East Coast of the United States, and the linking Atlantic and Indian Oceans.

The growth of transshipment activities has been a crucial determinant in the evolution of the Mediterranean port system over the past decades. Transshipment made up for 28% of global trade in 2012, double what it was 20 years before.[1] This is closely correlated with the growth of long-distance containerised trade and with a shift in shipping companies' business model towards gigantism, namely the use of increasingly bigger vessels to draw the greatest benefits from economies of scale. As mega ships are used to move goods across long distances (for instance the East-West route) their cargo is then unloaded and divided onto smaller ships at intermediate ports, and then proceed

1 More recent data is unavailable, as information about transshipment activities is often not disclosed.

towards their market of final destination. Transshipment tends to occur in convenient geographical spaces (transshipment markets, also called intermediate hubs) that naturally connect multiple markets, such as the Caribbean, the Southeast China Sea, and the Mediterranean, in fact. Transshipment accounts for the majority – and at times almost the totality – of activities in several Mediterranean ports, where cargos travelling from Asia are distributed to reach their final destinations in Europe (through gateway ports in the Mediterranean or in Northern Europe), Africa or the East Coast of the United States.

Mediterranean ports are in a strategic position to serve the sea-to-sea transshipment business, acting as a connector between global and regional markets; yet the big Northern European ports remain the most important gateways to European markets, where they hold a considerable advantage mainly due to their multimodal system of transportation.[2] The main limitation of Mediterranean ports remains precisely poor intermodal connectivity, which limits the opportunities to expand their hinterland and related economic benefits. Nevertheless, the growth of Mediterranean ports has caused a shift in the overall European port system: the top four ports are still Rotterdam, Antwerp, Hamburg and Bremerhaven – Antwerp is even referred to as *the biggest port in the Mediterranean* because it is often the destination of freight shipped through the Suez Canal destined to the European market. However, container ports in the Mediterranean are catching up, particularly the top four Mediterranean ports, which registered very strong year-on-year growth in the first quarter of 2019: Algeciras (+8.2%), Valencia (+12.5%), Piraeus (+24.4%), and Barcelona (+5.97%). According to recent growth projections, the Piraeus will soon overtake Bremerhaven as the fourth largest container port in Europe (Notteboom, 2019).

While growth in transshipment was an opportunity for Mediterranean ports, this type of activity can hinder regional cooperation and limit the overall economic return of large investments in infrastructures. Transshipment markets are determined by a combination of geography and strategic investments: for instance, the Mediterranean is a natural passageway of trade flows between the East and West, made easily accessible by the creation of the Suez Canal. Yet the choices of individual ports to handle trade flows within the same intermediate hub vary at the discretion of shipping companies, and can shift over time. The competitiveness of a port is not only determined by geography – i.e. its proximity to the shipping trunk line – but also by the overall quality of the services offered, especially in terms of connections with other transport networks (integration between port facilities, inland terminals and multimodal corridors, among others).

The trend to use mega ships and the oligopoly of a few shipping industrial complexes active in the Mediterranean – 2M (Maersk, MSC) and Ocean Three (CMA CGM, UASC,

2 Multimodal transport is the transport of the same good from origin to destination under one contract, but through more than one means of transportation, e.g. sea, rail and road.

CSCL) – push ports to compete for companies' investments. This can induce an overall improvement in infrastructure, technology and logistics in the region but also creates a dynamic of competition between ports serving the same market. These markets tend to saturate quickly, to the benefit of those who invest first. An example of the *first mover advantage* dynamic is provided by the case of Morocco in the Maghreb, which will be explored further in the next section.[3] By rapidly becoming a successful transshipment hub in the Maghreb, Tanger-Med has inspired neighbouring countries to follow its example – with Libya, Tunisia and Algeria developing renovation plans for their own port systems – while at the same time leaving little appetite among foreign investors to direct their money elsewhere. Last but not least, transshipment activities that are not well integrated within the development strategy of a port hinterland tend to support offshore activities more than the country economy beyond that of the port's immediate surroundings. As shown in the next section through the cases of Tanger-Med and the New Suez Canal, an integrated port cluster strategy that includes interventions, not only in ports but also in areas such as industry and trade, is critical to maximise the benefit of large investments in infrastructure development projects.

Infrastructure Development and Industrial Strategies: The Cases of Tanger-Med and the New Suez Canal

Investments in the Southern Mediterranean have been another driving force behind the overall maritime infrastructure development of the region. In particular, the new transshipment hub of Tanger-Med and the expansion of the Suez Canal are cases worth exploring further for the considerable impact on the overall maritime architecture of the region, and the role played in the economic development of Morocco and Egypt, respectively.

Tanger-Med has been a priority project for the Moroccan government in the process of diversifying the Moroccan economy, which puts stronger emphasis on exports and its maritime economy, recipient of roughly 30% of total public investments. Located in the Strait of Gibraltar, Tanger-Med is connected to 186 ports worldwide and is home to an industrial hub of 900 companies (Tanger-Med Special Agency Website, 2019). The complex includes four export-oriented free trade zones (FTZs), where customs duties are not imposed, designed to attract investments and create new jobs: over 70,000 jobs were created thanks to the project – 6,000 at the port, and over 60,000 in the trade zone area – according to the president of the Tanger-Med Special Agency (Eljechtimi & Laessing, 2019). Today, Tanger-Med is the biggest port in Africa and one of the biggest

3 *First mover advantage* is the advantage gained by the initial significant occupant of a segment of a market.

in the Mediterranean. The creation of Tanger-Med was preceded by a broader process of economic planning, including heavy use of public diplomacy to attract deals with shipping companies – the port terminals are operated by APM Terminal, and owned by Denmark's Maersk, Germany's Eurogate, and a local firm. Relocation of production processes to the Special Economic Zone (SEZ) established around the port facilities is strongly encouraged. Renault SA relocated its entire production processes destined to serve the African and European markets to Morocco, and companies such as Peugeot SA, Siemens and Huawei have opened logistical platforms in Tangier. Therefore, when the port became officially operative in 2018, the wider economic environment around it was ripe to produce optimal benefits for the country's economy. The newest port terminals opened in June 2019.

Somewhat in contrast with the case of Tanger-Med, the renovation of the Suez Canal followed a different trajectory: the project was launched by Egyptian President Sisi in 2014, and was carried out in record time. The modernisation of the canal was completed in 2015 having taken only 11 months, doubling the capacity of the previous channel – from 49 to 97 ships able to pass through at the same time, and transit time decreased from 18 to 11 hours, with a consequent cut in operating cost by 5-10% (Baccelli, Buonfanti, Ferrara & Zucchetti, 2015). The new canal provides a convenient alternative not only to the Cape of Good Hope but also to the Panama Canal for certain routes between Asia and the East Coast of the United States: choosing the Suez Canal allows economies of scale to be exploited to the fullest by using large vessels (beyond the Panama Canal's limit of 14,500 TEUs)[4], and to cross intercontinental hubs – such as Colombo, Dubai, Tanger-Med, Piraeus, Gioia Tauro and Algeciras, to name a few. Experts have hypothesised a direct effect of the new Suez Canal on the further growth of international trade between Asia and Europe, and the Middle East and Europe (Baccelli, Buonfanti, Ferrara & Zucchetti, 2015).

Despite the potential opportunities the project opened up for increased maritime traffic, it has attracted numerous criticisms and has been included in the list of Sisi's so-called *vanity projects* (Mandour, 2019). Beyond the objective boost of the Canal's capacity to serve international trade, critics claim that current levels of growth in the global economy and trade flows are stagnant, and do not justify the mega project, when investments could have been channelled into other regions and economic sectors in the country, whose economy is struggling (Knecht, 2015). Moreover, the rapidity of the project conceptualisation and execution left little time for wider economic planning beyond the realisation of the expansion. The renovation was only afterwards followed by the conceptualisation of a bigger investment plan aimed at making the Canal region an area

4 TEU: twenty-foot equivalent unit, that is the unit of cargo capacity often used to describe the capacity of container ships and container terminals.

of economic development, including industrial hubs and research centres, and the Suez Canal Corridor Area project (SCZone.) The project aims to create a logistics region that would allow Suez to take advantage of being at the very core of the East-West route, and not only act as an obligatory passage point. China is one of the main foreign investors in the SCZone through a Memorandum of Understanding (MoU) signed between Egypt and China's Tianjin Municipality, for the establishment of a FTZ area following the Tianjin Economic-Technological Development Area (TEDA) example ("Suez Canal Authority", 2019). This is not an isolated case but an example of a growing presence of Chinese investments in the region, as shown in the next section.

Investment and Connectivity Strategies: Understanding the Mediterranean as a Region

Philippe Le Corre (2016) stated that the internationalisation of China and its companies is the most significant phenomenon of the early 21st century. After expanding its economic and political influence throughout Asia, Latin America and Africa, China's presence is growing in Europe, with the Mediterranean as one of the spaces in which this shift is most evident. Chinese foreign direct investments (FDI) in Europe has increased almost fifty times in eight years – from $840 million in 2008 to $42 billion in 2016, when Chinese investments in Europe became four times larger than European in China. While in 2016 the largest portion of Chinese FDI in Europe fell under the information and communication technology (ICT) heading (11.8%), in 2017 investments in the transport and infrastructure sectors taken together had more than doubled, representing the largest share of the total (15.3%) (Rhodium Group). In Southern Europe, China has targeted mainly countries undergoing important processes of privatisation and restructuring of national economies following the 2008 financial crisis, particularly Italy, Portugal and Greece (Zeneli, 2019). Moreover, in 2012 China created the 17+1 platform[5] (formerly 16+1), bringing together European Union (EU) and non-EU countries for orchestrating investments in key transport routes connecting south-eastern and central Europe under the broad umbrella of the BRI (Bennis, 2019).

China's BRI has been defined as the most ambitious infrastructure project in history, with an estimated total amount spent between $1.2 and 1.3 trillion by 2027 (Chatzky & McBride, 2019). Launched in 2013 by Chinese President Xi Jinping, the Silk Road Economic Belt and the 21st Century Maritime Silk Road – together with the BRI – are a maze of infrastructure projects stretching and connecting through and around Eurasia. The Silk Road Economic Belt comprises six economic projects and related land

5 The 17+1 platform includes China and 17 countries of the CEE (CEEC) – Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, North Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia and Slovenia. The 17+1 meet annually; summits were held in Dubrovnik (2019), Sofia (2018), Budapest (2017), Riga (2016), Suzhou (2015), Belgrade (2014), Bucharest (2013) and Warsaw (2012).

passageways connecting China with Europe. The Maritime Silk Road creates a loop around Eurasia: the southern section runs all the way though the Indian Ocean, across Southeast Asia to the Mediterranean, while the northern section connects Asia and Europe through the Northern Sea Route (NSR) across the Arctic, which China calls the Ice Silk Road. The initiative has been framed by the Chinese government as a tool to boost and sustain China's massive export economy, and foster international cooperation, while denying any more ambitious geopolitical and security ambition. The BRI includes infrastructure development projects as well as the creation of SEZs along the way, modelled after China's very own economic development strategy. Although not explicitly underlined in official declarations and documents, China looks at the Mediterranean in regional terms, as shown by the plurality of projects that are either planned or under development in virtually every corner of the Mediterranean basin. Some are branded under the BRI, particularly investments in maritime infrastructure and connectivity; others are connected to the BRI, although not directly branded, such as industrial development and ICT projects located in proximity to port facilities. The next paragraph briefly outlines significant examples. Without trying to be a comprehensive list of Chinese investments in the region, it provides an idea of the magnitude of China's growing presence in the Mediterranean.

The project that officially brought the matter into the spotlight is the acquisition of a 67% stake in the Greek port authority of Piraeus by China Ocean Shipping Company Limited, known as COSCO, the biggest and state-owned Chinese shipping and logistics services supplier company. COSCO's involvement with the port began in 2008 with a 30-year concession to manage two terminals and continued with the creation of a third terminal in 2013. Today, COSCO has full management control of the port authority and has made the Piraeus the main gateway of Chinese goods into Europe, to the point of competing for the position of fourth most active European port in terms of containerised TEUs handled per year. The aforementioned 17+1 platform aims to ensure that, once goods have entered the European market, they can travel easily throughout by land and sea (Bennis, 2019). Similarly, the MoU signed between China and Italy in March 2019 follows the same logic. Italy is the third largest recipient of Chinese FDI in Europe (after the United Kingdom [UK] and Germany) and was the first G7 country to formally adhere to the BRI. Of the 24 points of the MoU, two projects are particularly relevant in the maritime domain, namely the planned investments in the two Italian ports of Genoa and Trieste (Carli, 2019). On 9 November 2019, a follow-up agreement laid the foundation for the development of logistical platforms in China that will be directly connected with the port of Trieste, supposedly to boost export of "Made in Italy" in mainland China ("Il porto di Trieste firma un accordo", 2019). China is also developing the Marseille

International Trade City (MITC) around the port of Marseille – which, as mentioned, is one of the main gateway ports in the Mediterranean – and the Chinese multinational technology company Huawei has recently signed contracts with the Port Authority of Tanger-Med to open a logistical platform in Tangier's SEZ ("Huawei to set up regional logistics centre", 2018). Shanghai International Port Group (SIPG), a state-owned Chinese company, is building a new terminal in the Israeli port of Haifa, on the condition of owning the operation rights for the terminal for 25 years after the facilities enter into service in 2021 (Atlı, 2019). COSCO owns a 20% stake of the Suez Canal Container Terminal (SCCT) in Port Said in Egypt under a 49-year-long concession. The remaining shares are held by APM Terminal (Maersk group) (55%), and local stakeholders[6] (SRM, 2015).

China's entry into the Mediterranean maritime space, in connection with the broader BRI and the greater totality of FDI in Europe and Africa, has raised increased attention and questioning by the expert community, policy-makers and voters alike. However, while Washington has been quick to define the BRI as an economic and potentially military threat to the United States (US) and the transatlantic alliance, the EU and its member states have kept a more ambiguous position and only recently moved toward a more defined and assertive framing of Sino-European relations. In June 2019, through the High Representative of the Union for Foreign Affairs and Security Policy's declaration on *EU-China – A strategic outlook,* the EU defined China for the first time as a "strategic competitor, [...] failing to reciprocate market access and maintain a level playing field."

Passive scepticism and multiple short- and long-term concerns in relation to Chinese terms and conditions under the BRI pervade the European debate and are mainstream among EU policy-makers. These include but are not limited to: Chinese non-competitive economic behaviours – such as price distortion due to state subsidies, discrimination against European companies under Chinese tenders, and restricted access to the Chinese market for European companies; threats to European strategic assets, intellectual property and technological know-how; potential loss of economic leadership of European companies – in terms of maintaining the ability to create and control markets and rules of exchanges, to set prices and select business partners; and fears around broader normative and political ramifications of Chinese investments, particularly in relation to environmental, labour and human rights standards. In February 2019, following pressures from Germany, France and Italy, the EU introduced a new regulation to ensure harmonisation and encourage cooperation among national screening mechanisms of FDI in EU member states. Although this regulation provides a useful framework to support EU countries in identifying potential "risks to security or public order" that could be

6 Suez Canal Port Authority (10.3%), National Bank of Egypt (5%), Egyptian private investors (9.7%).

inherent to foreign investments, it does not introduce new competencies at the EU level in connection with investments policy, nor is legally binding in any way, and of course does not apply to the EU neighbourhood.

Beyond being an indisputable source of competition, China's investment policy can produce incentives for increased cooperation across the Mediterranean region, especially north-south and east-west, and a greater role for the EU in addressing the existing need for infrastructural development in the region. The European niche of expertise grounded in technological advantage, investments in innovation and rules-based regulations for sustainable growth is key to ensure that European member states keep control of their markets and strategic assets. This concept is in fact at the root of the 2018 EU strategy for "Connecting Europe and Asia – Building Blocks for an EU strategy". The strategy is the closest existing thing to a response to the BRI and aims to lay the ground to address the identified investment gaps in Eurasia, estimating that Europe and Asia will need 1.5 and 1.3 trillion EUR, respectively, in the period 2021-2030 (High Representative of the Union for Foreign Affairs and Security Policy, 2018). The EU plan is to contribute to enhanced connectivity between the two continents by prioritising three areas: building common ground for efficient connections and networks; establishing bilateral and multilateral partnerships grounded in shared rules and common standards; and mobilising public and private sector resources. The strategy is a good starting point to define the EU posture and intentions: moving forward, the EU will need to mobilise enough resources under the Multiannual Financial Framework (MFF) 2021-2027, and streamline its policies concerning connectivity and strategic assets, such as maritime infrastructure, throughout its internal and external actions.

A regional perspective in addressing connectivity will be key to success, especially in the maritime world, which serves a global network of trade routes, and where borders are harder to define than on land. The EU can provide financing to catalyse additional public and private capital to infrastructural projects and can use its experience of the Trans-European Transport Network (TEN-T) to offer technical assistance, and mobilise resources to sustain investments beyond its borders, to its eastern and southern neighbour states. Steps in this direction are the Sofia Declaration of the May 2018 EU-Western Balkans Summit for a sustainable increase in connectivity in transport, energy, and digital and human capital; the suggestion included in the EU-Asia connectivity strategy to "extend the mandate of the EU TEN-T corridor coordinator(s) to the Enlargement and Neighbourhood region within the envisaged review of the TEN-T regulation which needs to be completed by 2023" and the Commission's proposal for an investment framework for external action, building on the current European Fund for

Sustainable Development, which is part of the EU's External Investment Plan and applies to Africa and the Neighbourhood. The latter does not refer to the Mediterranean in regional terms but can provide a useful starting point for future approaches to the region.

Ensuring Passage: Security Concerns Coming from the Gulf

Beyond the physical limits of the Mediterranean basin, two straits essential for the East-West trade route are playing a dangerous role in the escalating tensions in the Persian Gulf: Bab el-Mandeb and Hormuz. Secure navigation through these straits is essential for the global economy, given that Bab el-Mandeb is a crucial access point to the Suez Canal, and Hormuz is the passageway for the majority of oil travelling from the Persian Gulf towards Asia. The 30 km wide strait of Bab el-Mandeb is located in the Red Sea, and represents the shortest route connecting the Indian Ocean, the Mediterranean Sea and the Atlantic Ocean. Divided by the Perim Island into two channels, it has been an active trade route for centuries. Bab el-Mandeb increased in relevance after the construction of the Suez Canal and further with the export of oil from the Arabian Peninsula and the Persian Gulf. In 2018, an estimated 6.2 million barrels per day of crude oil and refined petroleum products flowed through the strait in both directions, toward Europe, the US and Asia (Barden, 2019). It also handles most of the EU trade with China, Japan and Asia en route through Suez. Ships carrying oil from the Persian Gulf to Europe and North America can avoid the Bab el-Mandeb by travelling around the southern tip of Africa, but the increased distances would add to shipping and fuel costs and disrupt supplies. A voyage from Saudi Arabia to Rotterdam takes about 22 days via the Bab el-Mandeb and Suez Canal, compared with 39 days around Africa (Lee, 2018). The Bab el-Mandeb region has been one of the most likely to come under threat from pirate attacks and use of the strait was suspended in 2010 at the peak of the Somali piracy crisis. Saudi Arabia temporarily halted the use of the strait in 2018 after two tankers were attacked by the Yemeni Houthi militia (Blas, 2018).

The Strait of Hormuz is the main maritime route through which Persian Gulf exporters (Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates [UAE]) ship their oil to external markets. Only Iran and Saudi Arabia have alternative access routes to maritime shipping lanes. The US Energy Information Administration (EIA) estimates that approximately 17 million barrels of oil per day – about 35% of all seaborne oil exports – pass through the strait. This path is also the most efficient and cost-effective route through which these producers can transport their oil to East Asia. Persian Gulf countries depend heavily on revenue from these exports: they are a leading oil-producing

region, accounting for 30% of global supply. Meanwhile, East Asia is a major oil-consuming region: it accounts for 85% of the Persian Gulf's exports (Barden, 2019). The Strait of Hormuz is the only sea route out of the Gulf. A Saudi pipeline goes to the Red Sea but its capacity is limited to about five million barrels of oil a day ("Iran tanker seizure", 2019).

Disruptions could take place when countries threaten to deny each other passage through these straits. Iran has threatened to close the Strait of Hormuz multiple times, while Saudi Arabia and its allies have conducted naval drills to show their willingness and ability to retaliate should Iran follow through. Alliances to counterbalance Iran often involve the US. In June 2019, explosions were reported on two oil tankers in the Gulf of Oman, off Hormuz (Borger & Wintour, 2019). The episode took place about one month after a separate attack on four tankers in May. At the time, investigations conducted by the UAE found that the mines used to perpetuate the attack suggested the involvement of a state-like actor (Versi, 2019). The US claimed Iran's involvement was almost certain, while Iran insists that these are attempts to frame them and escalate tensions.

Rising tensions, in addition to increasing discrepancies globally within traditional security alliances, call for more attention to be paid by the EU to the security of navigation in the Persian Gulf. Any plan for sustainable connectivity that aims to be effective must take security concerns into account. The EU-Asia connectivity strategy does explicitly state the need to step up its engagement, together with partners, to ensure freedom and security of navigation between Europe and Asia. However, concrete steps are yet to follow through. In the immediate aftermath of the June attack, the then British foreign secretary Jeremy Hunt proposed the creation of a multinational maritime task force to protect and ensure freedom of navigation in the Persian Gulf (Wintour, 2019). The initiative, although not intentionally excluding the US, would have existed as an alternative to the US-led Operation Sentinel. This was an attempt to distance European states from the US economic strategy of maximum pressure against Iran, which is widely criticised by the EU and its member states, together with the US decision to withdraw from the Joint Comprehensive Plan of Action (JCPOA). Although the EU has been present in the region since 2008 with anti-piracy operations Atlanta and UNAVFOR, the plan did not go through, amidst resistance from European states as well as Iran, leading to the UK joining Operation Sentinel after all (Wintour, 2019). Saudi Arabia also joined in September 2019, following an attack on its largest oil processing facility in the same month, claimed by Yemeni Houthi rebels but attributed to Iran by both Saudi Arabia and the US ("Saudi Arabia joins US maritime operation", 2019).

Beyond the Mediterranean: Alternative Routes

Security in the region is also of utmost importance because no alternative route to the Mediterranean is as yet economically viable. The two main alternative routes to the Suez Canal connecting Europe and Asia that have the potential to become accessible in the long-term are the multimodal corridor of the Silk Road Economic Belt, and the NSR across the Arctic. However, both alternatives have been dismissed by scholars and stakeholders alike in the short-term. Although progress has been made to develop a railway connection between North China and northern Europe, this option would only be convenient for a limited number of routes. Moreover, the organisational complexity which derives from balancing the interests of many railway companies involved and the technical limitations of land transport would drastically halt the competitiveness of this alternative route. As of today, land transport remains much more expensive than any other means of transportation: measured in value, 70% of the trade goes by sea, over 25% is carried by air, while rail remains relatively marginal (United Nations Conference on Trade and Development, 2018).

The NSR, connecting the Atlantic and Pacific Oceans through the Arctic, is perhaps the strongest existing competitor to the Southern Sea Route (SSR). As human-made climate change induces an incremental melting of ice caps in the Arctic Ocean, this previously impossible route is becoming more and more accessible to navigation. With 13,000 km to separate East Asia from Europe, against the 21,000 km through Suez, the NSR has the potential to cut navigation time by two weeks. In August 2018, Denmark's A.P. Moller-Maersk Group sent its first container ship through the NSR (Noack, 2018). Earlier the same year, Russia's Novatek, the country's largest private gas company, shipped its first ever liquid natural gas (LNG) cargo through the NSR on a special LNG tanker to China. COSCO has also used the NSR to transport heavy parts of industrial components using multi-purpose vessels (Milne, Foy, 2018). Temperatures in the Arctic have reached up 30 degrees Celsius: similar temperatures for a prolonged stretch of time would allow container ships to navigate the Arctic Ocean without the expensive icebreakers that are now necessary to clear paths for them. Bekkers, Francois and Rojas-Romagosas (2015) in the scientific paper *Melting Ice Caps and the Economic Impact of Opening the Northern Sea Route* anticipate "remarkable shifts in trade flows between Asia and Europe, diversion of trade within Europe, heavy shipping traffic in the Arctic and a substantial drop in Suez traffic."

Despite the sizeable estimated cut in transport time, and the increasing interest shown by countries such as Russia and China as well as a few private actors in the NSR,

stakeholders from the shipping industry are still sceptical regarding its viability and profitability in the short term. The NSR could not be used throughout the whole year: the extreme weather conditions that characterise the Arctic region would make it almost impossible to maintain the degree of predictability of transit logistics necessary, a disadvantage that rebalances the gains of the decrease in transit time in favour of the SSR, at least for the foreseeable future. Limitations on the size of ships that can cross the NSR add another layer of complication, even more so as shipping companies gravitate towards gigantism and actively seek opportunities to take advantage of economies of scale. Moreover, the much lower density of markets and population centres along the NSR suggests that, although it could become commercially viable over the next 10 to 20 years, it is unlikely to substitute the SSR as the main East-West passageway.

Conclusions

Exponential growth in domestic and foreign investments in the Mediterranean port system, spurred by a spike in trade flows between Europe and Asia, has transformed the Mediterranean basin from an obligatory passageway into a strategic crossroad of global trade in the span of 25 years. While alternative routes such as the NSR or the Silk Road Economic Belt might increase their viability over the next couple of decades, the navigation route through the Suez Canal is likely to remain the busiest connection for energy and traded goods on the East-West route.

Infrastructure projects such as the New Suez Canal, the transshipment port of Tanger-Med and multiple investments promoted under the BRI are creating momentum for the region, and bringing forward the strategic importance of ports; while security concerns emerging from rising tensions in the Persian Gulf call for a rethinking of available maritime security mechanisms, and enhanced cooperation between Europe and Asia to protect the freedom and safety of global trade flows.

As more attention is paid to maritime infrastructures as strategic assets, it is important to assess what the conceivable long-term consequences of FDI in the Mediterranean port system are, for the system itself and the region as a whole. More complete and detailed data is needed to move this analysis forward, not just about the quantity but also the duration and conditions of existing agreements for acquisitions and concessions, including information on their environmental and social sustainability, which have not been adequately analysed in the existing literature.

It is also important for regional actors – including the EU – to identify investment gaps in the Mediterranean port system in order to develop successful port development strategies that allow the region to draw maximum benefits from transshipment activities. Moreover, using a regional lens would help to develop platforms that enable multi-stakeholder governance across borders, sectors and institutions, thus limiting competition in favour of cooperation.

The EU is well placed to build upon its current strategies to contribute to the sustainable growth of maritime infrastructure in the region, boost private-public partnerships and improve multi-stakeholder cooperation across the Mediterranean, by facilitating cooperation with port authorities, and national and local governing bodies. It can also foster a coordinated effort internally, across multiple Directorates-General (DGs) and respective public policies, such as DG Mobility and Transport (MOVE), DG Environment (DG ENV), DG Maritime Affairs and Fisheries (MARE) and DG Internal Market, Industry, Entrepreneurship and SMEs (GROW); as well as DG Neighbourhood and Enlargement (NEAR), DG Development and Cooperation (DEVCO), and the European External Action Service (EEAS). Trade, investment and connectivity policies can be more strategically and regularly leveraged within the EU foreign policy toolkit to create incentives for cooperation and convergence across the Mediterranean.

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Geopolitics of Gas in the Eastern Mediterranean Region: Is there Light at the End of the Tunnel?

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Setting the Scene

This chapter seeks to provide a concise overview of Eastern Mediterranean natural gas developments in order to assess the related geopolitical challenges and opportunities around the construction and use of gas infrastructures in the region. It first considers the relevance of the topic and what the geopolitics of gas dynamics tells us about shifts in traditional arrangements as well as the politicisation/securitisation of the relations around gas infrastructures. This will then constitute the basis for the analysis of the different gas pipeline options for delivering gas from Cyprus and Israel to the European markets, taking into account that these two countries do not have a large enough domestic gas market to accelerate the development of gas fields. These options involve the construction of pipelines – from Israel to Jordan or to Egypt, from Cyprus to Egypt, from Israel and Cyprus to Italy and then to Europe, from Israel to Turkey and then to Europe. It also shows each option's advantages and constraints. This chapter then examines two dynamics that significantly affect the current state of play in the Eastern Mediterranean offshore exploration and development of gas, namely multilateral cooperation, on the one hand, and the unilateral decisions taken by Turkey, on the other. The last section introduces some reflections on future trends and outlines some policy recommendations.

The Eastern Mediterranean region holds, without question, large hydrocarbon resources.[1] As of January 2020, natural gas resources discovered in Egypt, Israel and the Republic of Cyprus amount between 78 and 83 trillion cubic metres (tcm). And yet, the region remains one of the world's most underexplored or unexplored areas, despite having good prospects for additional gas – and, perhaps oil – reserves.[2]

If developed successfully, the major natural gas discoveries in this region may significantly change the energy picture in the wider Mediterranean region. They may be a force that promotes energy security, economic prosperity and regional cooperation. If not, they might become a main component of the geopolitical struggle and existing fuel disputes and add to the various frictions and anxieties in the region and beyond (Karbuz, 2012).

The discoveries of gas fields in the Eastern Mediterranean region have started to rearrange regional dynamics, and are providing a possibility of cooperative efforts in and

1 The "Eastern Mediterranean" region is defined differently by geographers, policy-makers and experts. For the purpose of this chapter, the Eastern Mediterranean is comprised by nine states, namely Egypt, Turkey, Greece, Cyprus, Israel, Palestine, Jordan, Lebanon and Syria.

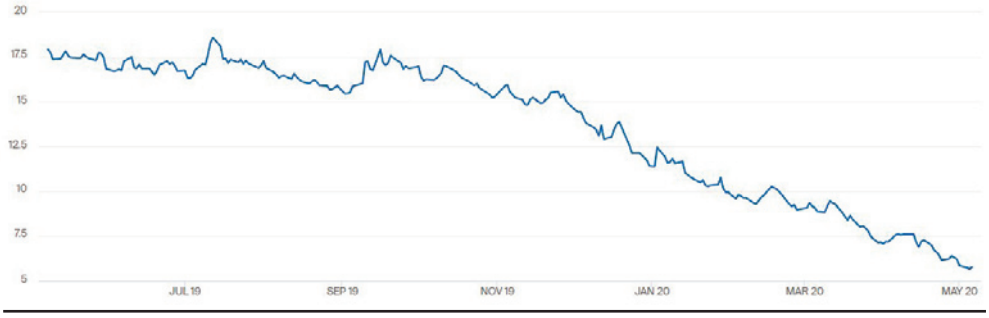
2 In March 2010, the U.S. Geological Survey (USGS), using a geology-based assessment methodology, estimated that the entire Levantine basin – a geological formation encompassing the offshore sections of Israel, Gaza, Lebanon, Syria and Cyprus – could hold as much as 120 trillion cubic feet or 3.4 billion cubic metres (bcm) of recoverable gas and 1.7 billion barrels of recoverable oil (USGS, 2010). The USGS also estimated that the Mediterranean area, including its existing and assumed oil and gas reserves (the Aegean Sea, for example), could contain more than 340 trillion cubic feet of gas, which is the fourth largest in the world after Russia, Iran and Qatar (USGS, 2010; BP Statistical Review of World Energy, 2018). That is enough to power the region for decades or the EU for 20 years. It is this latter prospect – of exporting energy to a wealthy and strategically important region – that is creating a new commercial and diplomatic alignment in the Eastern Mediterranean region.

beyond the energy sector (Bornstein, 2018). These discoveries represent a "golden opportunity" for the countries to meet their domestic energy demand and achieve their energy self-sufficiency. In addition, it could also provide these countries with enormous financial resources from exporting gas in the long run. It will help them to upgrade their economic systems, modernise their military systems, and thus achieve a higher degree of security and stability (Kandil, 2018).

Egypt, Israel and the Republic of Cyprus can become gas exporters if oil and gas companies convert discovered gas reserves into production capacity. Companies will carry on costly exploration and field development endeavours if they believe they will have the ability to commercialise their discoveries with a favourable rate of return. Much will depend on the gas price the companies will receive in selling natural gas to the domestic market, the availability of export options and transport means, and stability in the countries' regulatory, fiscal and gas policies, as well as in the overall political atmosphere, etc. Above all, such gas discoveries require a certain new infrastructure to transport it to the markets. Neither Israel nor Cyprus has any gas export infrastructure while Egypt has significant capabilities in such infrastructure, mainly in liquefied natural gas (LNG) facilities, as will be explained later. In this context, three realistic options have been considered to export gas from the region to the world markets: by pipeline, via LNG, and a combination of both.

However, all these options are subject to a number of uncertainties. One of the key uncertainties relates to the actual size of the Eastern Mediterranean's gas reserves, together with its potential production rate, the size of domestic demand, and hence the actual volume of gas that would be available for export under a typical long-term contract.

Figure 1. Dutch TTF from May 2019 to May 2020



Source: Intercontinental Exchange.

At the commercial level, the conditions of the natural gas market in the European Union (EU) and the global gas prices represent another significant uncertainty for the profitability

of most of these options. Prices of natural gas have been extremely low due to a trend of slowing global demand that was exacerbated by the Covid-19 pandemic that additionally contracted global energy demand. For example, the key Dutch TTF front-month June 2020 contract has fallen to an all-time low (since S&P Global Platts started assessing the contract in 2004) of €5.76/MWh on 6 May 2020. A year earlier, this price was €17.9/MWh on 8 May 2019 (see Figure 1).

In this regard, gas exports from the Middle Eastern region will likely face fierce price competition in the European markets, which consequently challenges the profitability of most gas exporting options. Furthermore, many such options are also hindered by several geopolitical and legal uncertainties. Political uncertainty and growing conflicts are still among the main obstacles to the use of the discovered gas, as demonstrated by the complicated geopolitical situation in the region, especially in Libya, Cyprus, the Occupied Palestinian Territories, Lebanon and Syria. In addition, there is no agreement among major actors in the region over conflicting claims regarding the ownership of resources and the demarcation of maritime borders. Heightened political tensions and conflicts over the unresolved demarcation of maritime borders between Cyprus and Turkey and between Greece and Turkey are arguably the most visible sensitive subject, even though the core issue is the Cyprus conflict. This is arguably the most pressing uncertainty for a possible gas pipeline connection between Israel and Italy or between Israel and Turkey if such pipelines could become economically wise (Andoura & Korani, 2014). In this context, Turkey does not acknowledge that Cyprus has an Exclusive Economic Zone (EEZ) beyond its twelve-mile territorial limit and has harassed exploration vessels beyond that distance.[3] The Turks also claim that their own EEZ reaches as far south as a line with Egypt – though Cairo has agreed on an EEZ with Cyprus that includes much of this area. Adding to the confusion, Ankara allows the otherwise unrecognised "Turkish Republic of Northern Cyprus" – where Turkish forces are based – to claim a large EEZ south of the island, extensively overlapping the EEZ claimed by the internationally-recognised Cypriot government (Henderson, 2017a). Moreover, Turkey signed a deal with the United Nations (UN)-backed government in Tripoli, Libya on 27 November 2019 demarcating new maritime boundaries between the two countries. The new claimed maritime boundary transects an area claimed by Greece and Cyprus. It runs close to the Greek island of Crete and could jeopardise plans for a gas pipeline to deliver eastern Mediterranean gas to Europe. This deal has stoked tensions between Ankara and European capitals and raised the stakes in an escalating battle for gas resources under the Mediterranean Sea ("Turkey's Territorial Deal", 2019).

3 Turkey has not defined its EEZ with its neighbours, and disputes theirs. Turkey rejects all Cypriot maritime agreements, including those with Israel and Egypt. As Turkey is not a signatory to the UN Convention on the Law of the Sea (UNCLOS), this excludes an application to ITLOS (International Tribunal for the Law of the Sea). As Turkey recognises neither the Republic of Cyprus nor the jurisdiction of the International Court of Justice, it has preferred a settlement based on the use of force. In 2004, Turkey suggested drawing a line midway between its coast, and Egypt is riding roughshod over the rights of the countries in between (Greece and Cyprus). Egypt politely refused. In 2011, Turkey agreed on an EEZ with the Turkish Republic of Northern Cyprus (TRNC). The zone claimed by the TRNC sits almost exactly on top of the zone the Republic of Cyprus had already settled on with its neighbours to the east. The zone claimed by Turkey sits on top of much of the zone Cyprus has agreed on with Egypt to the south.

At the same time, there is an increasing European demand for natural gas. Currently, the world is moving towards safer energy sources with lower emissions. From this perspective, gas discoveries in the Eastern Mediterranean region could play a significant role in the EU energy policy. Natural gas is an intrinsic part of the European Commission (EC)'s Clean Energy for all Europeans strategy. Specifically, natural gas is considered a bridge fuel that can aid in the transition to renewable energy; unlike other types of plants, gas plants can be easily fired up and down and emit 50% less carbon dioxide than coal when burned (European Commission, 2016). Europe's overall annual gas consumption is still satisfied primarily by Russia (over one third of its natural gas supply), secondly by Norway and other countries including Algeria, although gas production in Norway is gradually declining as its fields mature (Coote, 2016). In the lowest of demand projections, import needs could be slightly lower (by some 10 bcm) in 2020, but would then be about 20 bcm higher than 2015 levels by 2025. In addition, the natural gas fields discovered in the Eastern Mediterranean region are a strategic opportunity for the EU while the European reserves are declining and Europe's dependence on Russian gas is high. It is estimated that Russia will remain the biggest source of supply through 2025 and Russia's share of EU gas consumption will rise to 40% (Pisca, 2016). This has been a tool of pressure to threaten Europe's energy security (Korteweg, 2018).

Under ideal conditions, the natural gas resources of the Eastern Mediterranean could be a force for regional stability and make a meaningful contribution to European energy security. However, politics clearly trumps commercial logic in much of the region and enduring conflicts and unresolved disputes in the Eastern Mediterranean promise to shape – and constrain – the development of offshore energy and its possible export to Europe in the near future (Kandil, 2018). As of 2020, only two of the Eastern Mediterranean's gas fields, Zohr and Tamar, are producing. Their gas is mainly used in the domestic markets of Egypt and Israel, while a small portion is sent via pipeline to Jordan. Until now, there have been no gas exports from the region to Europe while Israel's largest field – Leviathan, estimated at 22 tcf – is still being prepared for production.

A summary of gas export options in the Eastern Mediterranean region

Country	Field	Export options	Amount of gas ready for export	Feasibility of each option
Israel	Tamar	Jordan	About 1.8 bcm to the Arab Potash Company and the Jordan Bromine Company (since January 2017) for a period of approximately 15 years.	Started in January 2017.

Country	Field	Export options	Amount of gas ready for export	Feasibility of each option
Israel	Tamar	Egypt	A minimum total quantity of 3.5 bcm per year, which is expected to increase according to the available quantity of gas remaining after supplying all the needs of the Israeli economy up to a total of 32 bcm in total. The agreement was signed in February 2018 between Tamar Partners and the Egyptian company Dolphinus Holdings. Supplying between 4.5 and 7.5 bcm per year to the Damietta natural gas liquefaction plant in Egypt, totalling approximately 70 bcm over 15 years. Tamar Partners signed an MoU with Unin Fenosa Gas. However, in light of the developments and the new export agreements signed, this MOU is no longer relevant, and the parties are in negotiations on other export options.	Started in January 2020.
		Jordan	Approximately 45 bcm of natural gas for a period of 15 years. The agreement was signed in September 2016 between the Leviathan partners and the Jordanian National Electric Power Company (NEPCO).	Started in January 2020. The gas is transported via the INGL grid to customers in Jordan via the Arab Gas Pipeline.
	Leviathan	Egypt	Up to 32 bcm per year for about 12 years. The agreement was signed in February 2018 between the Leviathan partners and Dolphinus Holdings. 7 bcm per year for 15 years to the ELNG liquefaction plant in Idku. A letter of intent was signed in June 2014 between the Leviathan partners and British Gas. This letter has not matured into a final agreement.	Started in January 2020. The gas is transported via the Israeli Natural Gas Lines (INGL) grid to customers in Egypt via the Arab Gas Pipeline and East Mediterranean Gas (EMG) Pipeline.
		Cyprus The Palestinian Authority Turkey	The Leviathan partners are still discussing the contacts for the export of natural gas.	
		Europe	The Leviathan partners are still discussing the contacts for the export of natural gas.	Low possibility because there appear to be both technical difficulties as well as unfavourable financial and topographic realities.

Country	Field	Export options	Amount of gas ready for export	Feasibility of each option
		Asia & Europe & others	The Leviathan partners are still discussing the contacts for the export of natural gas.	Low possibility because of high cost (in the $10-15 billion range) + environmental risks + long time to build.
		Egypt	Not available.	High risk with Turkey's opposition.
		Europe	Not available.	"A pipe dream", as there appears to be both technical difficulties as well as unfavourable financial and topographic realities.
Cyprus				
	Calypso-1	Egypt	Not available.	Not available.
	Glaucus-1	Asia & Europe & others	Not available	Low possibility because it requires 12-15 tcf to provide returns on the huge investment given low global gas prices.

Source: Prepared by the author.

Gas Pipeline Options

Taking into account that neither Cyprus nor Israel have a large enough domestic gas market to accelerate the development of gas fields, and that they both rely on export markets, the monetisation of their gas has become a very thorny issue: the existing gas resources need to attract several billion dollars of new investment in order to be commercialised (a process in the energy sector called monetisation). Israel and Cyprus have no pipelines to large consumers nor the facilities to liquefy gas in order to export it by ship (Thrassou et al., 2016). As these gas fields are located in close proximity to each other, cooperation on their monetisation is almost mandatory and, in fact, several monetisation options have already been considered for delivering gas from the Israeli and Cypriot gas fields to developed European markets. The most significant pipeline options, which have been under consideration, are via:

a. Jordan. The American company Noble Energy, which is based in Texas, has a 15-year, $10 billion agreement to supply Israeli's Leviathan gas to Jordan's electric power company, though none is expected to flow for at least two years. The deal is a very sensitive subject in Jordan, where historical tensions with Israel have been exacerbated by recent rows over Jerusalem and Israel's Prime Minister

Benjamin Netanyah's plan to annex all Jewish settlements throughout the West Bank. Rival, though less realistic, schemes have been mentioned for gas imports from Iraq or local nuclear power plants. Jordan's current imports are via LNG tankers arriving from the Arab Gulf at the Red Sea port of Aqaba. Small-scale imports of Tamar gas are already delivered via pipeline from Israel to factories on the Jordanian side of the Dead Sea (Henderson, 2017b).

b. Egypt. There is another monetising option that involves sending Israeli/Cypriot gas to Egypt through offshore or onshore gas pipelines. This option takes advantage of the new opportunities that opened up in the region with the discovery in August 2015 of Egypt's huge Zohr gas field. Zohr's deposits are estimated at 30 trillion cubic feet (850 bcm) and have been heralded as the solution to the country's energy problems (ENI, 2015). Combining the gas resources of Israel, Cyprus and Egypt would create a much bigger pool, which could be more attractive to Europe.[4] Additionally, Egypt's natural gas infrastructure is the most developed in the Eastern Mediterranean, and the Suez Canal offers one of the easiest, if not the cheapest, trade routes for oil and gas. Leviathan gas could theoretically reach Egypt via the existing Arab Gas Pipeline, which loops south to the Red Sea and then north across the Sinai Peninsula, where it could link with an existing Egyptian pipeline. However, previous terrorist attacks on this section of the pipeline argue against this option. Without this route, another option that has been discussed is laying another undersea pipeline from the Tamar and Leviathan production platforms directly to the liquefaction facilities in northern Egypt. However, that will take time and delay Israeli gas exports to Egypt (Scheer, 2019).

In addition, the Israeli gas could also theoretically reach Egypt via the old offshore pipeline. Until 2012, Egyptian gas flowed to Israel via a pipeline running offshore from al-Arish to Ashdod. This line could be used for sending Israeli gas in the other direction to underutilised Egypt's LNG terminals in Idku and Damietta, from where it could be exported via tanker. In February 2018, the Egyptian Delphiniums gas company signed a landmark $15 billion agreement with the United States (US)-based Noble company and its Israeli partners whereby the former will receive the natural gas produced by the Israeli Leviathan and Tamar natural gas fields through already existing pipelines with about 64 billion cubic metres of gas over 10 years in order to process, liquefy and export (Cohen & Rabinovitch, 2018). In October 2019, this agreement was amended to raise supplies by 34% to 85.3 billion cubic metres. It already started exporting in early 2020 and will continue through 2034. This deal

4 The possibility of seeing the Eastern Mediterranean gas exported to Europe can happen only if the region's gas can compete with prices prevalent in Europe. However, the price of gas produced from the region is still highly uncompetitive. For example, this gas price problem is evident when one considers the price agreed between the Leviathan partnership and the Jordanian National Electricity Company. This is reported to be $6 per mmBtu, when the price of Brent crude oil is in the range of $60-$70 per barrel. The price of Israeli gas arriving in Egypt is likely to be higher due to higher costs for the Leviathan to Egypt pipeline in comparison to the Leviathan to Jordan pipeline. That would make it uneconomical to liquefy and export to Europe. By the time liquefaction costs, ship transportation and regasification (converting LNG back to gas) costs are added, such gas will not be able to compete with longer-term gas prices in Europe, expected to average $6.50 per mmBtu between 2020 and 2030 (Ellinas, 2019).

will likely supply European or other international markets. But this offshore pipeline between Egypt and Israel was encumbered with overlapping legal disputes, including a Swiss court judgment awarding Israel $1.7 billion for Egypt's decision to stop the gas flow after the overthrow of Mubarak in 2011.[5] Although the Egyptian and Israeli governments had reached an agreement to reduce the $1.7 billion international arbitration ruling to around $500 million to be paid over eight and a half years ("Egypt Agrees to Pay Israel", 2019), the Thai state-owned energy company PTT Energy Resources is still seeking $1 billion in damages in a suit filed in the Administrative Court against the Egyptian government. PTT, which held a 25% stake in Egyptian Mediterranean Gas (EMG), alleges that Egypt failed to meet gas deliveries to EMG after 2011. The Egyptian government of former Prime Minister Sherif Ismail had made settling this case a precondition of any gas export agreement with Israel ("Thailand's PTT Energy Resources", 2019).

Furthermore, Egypt and Israel are also considering the construction of a liquefaction facility on the shores of the Red Sea in Sinai through which natural gas can be exported to markets in Asia, especially India, China, Japan, South Korea and other countries, which constitute 70% of the global liquefied gas market. The cost of building a medium-sized land-based liquefaction facility is projected in the $10-15 billion range. The new idea of building the liquefaction facility near Eilat is preferable to transporting gas through pipelines in northern Sinai to the existing liquefaction facilities because there is greater security control over the territory (Barkat, 2019).

In addition, Cyprus' gas could reach Egypt via undersea pipeline. On 18 September 2018, Egypt and Cyprus officially signed the first agreement of its kind in the Eastern Mediterranean region to establish a direct sea pipeline at a cost of about one billion dollars to transport natural gas from the Cyprus Aphrodite field to the liquefaction facilities in Egypt (Psyllides, 2018). However, Turkey has opposed this pipeline and condemned the latest drilling off Cyprus as an "unacceptable" violation of "the inalienable rights" of the Turkish Cypriot people. Analysts question whether energy companies will commit the billion dollars needed to build this pipeline in the absence of a deal that removes the political risks.

c. Italy, via the East Med pipeline project. Israel, Cyprus, Greece and Italy signed a provisional agreement in December 2018 to jointly develop this project with an aim for completion by 2025. In 2017, the EC labelled the project technically feasible and economically viable. The Commission stated that it "strongly supports" the project and that it is an "important option among other existing and possible future evacuation

5 To secure the $15 billion export pact (signed in February 2018) with Dolphinus Holdings, Israel's Noble Energy and Delek, along with their Egyptian partner East Gas, agreed to acquire a 39% stake of a disused pipeline connecting the Israeli coastal city of Ashkelon with north Sinai. The consortium paid $518 million for their interest in the East Mediterranean Gas Company pipeline (Rosenberg, 2019).

routes for the export of gas from the region to the EU" (European Parliament, 2017). Therefore, the East Med pipeline has been designated as a project of common interest (PCI) between the EU and the region, meaning that the project can receive a host of benefits, including "accelerated planning and permit granting" and "lower administrative costs" (Baconi, 2017). In January 2020, the leaders of Greece, Cyprus and Israel officially signed an intergovernmental agreement on the East Med pipeline project. The 2,000-kilometre pipeline will transfer up to 12 billion cubic metres a year from offshore gas reserves between Israel and Cyprus to Greece, and then on to other countries in southeast Europe. It is expected to provide around 10% of the EU's natural gas needs. Baconi (2017), among many analysts, questions the practicality of this project and describes it as "a pipe dream", as there appear to be both technical difficulties as well as unfavourable financial and topographic realities. The project would cost an estimated $7.36 billion, take seven years to build, and involve considerable technical challenges due to the water's extreme depth.[6] In addition, the project's viability probably depends on yet to be discovered gas (Samaha, 2019a). With its very high cost, the countries involved cannot hope to recoup that through selling gas to Europe, as they cannot compete with Russia on price. The construction of the East Med pipeline would necessitate what is considered a very high selling price of 8 US dollars/British Thermal Unit (BTU) now and for the foreseeable future (Tziarras, 2019). It is also estimated that it would take at least 10 years to recover the cost of the pipeline. Furthermore, Israel and Cyprus would need to sign purchase contracts with each buying a company in Europe, a complex and difficult process. In addition, the East Med pipeline's impact on the EU's energy security is also questionable. The proposed pipeline's annual gas deliveries would constitute about 4% of the overall European market demand (Honoré, 2018). In addition, Russia, eager to prevent the entry of new large sources of natural gas to Europe, could reduce the gas price to deter investments in this project (Meredith, 2019).[7] Turkey could also present a political challenge, especially if the East Med pipeline route traverses Ankara's putative continental shelf area (Marketos, 2018). The still unresolved Cypriot-Turkish issue also makes gas companies reluctant to get involved, making the project commercially unviable.

d. Turkey. For some time both the Israeli government and energy companies operating in the Eastern Mediterranean waters were considering construction of an

6 At 2,000km in length and depths of up to 3km, this pipeline would be the longest and most difficult subsea development of its kind.

7 Although it is very difficult for Gazprom to dump or lower international gas prices in order compete with East Med gas or to halt LNG exports or imports from the US, it is not impossible. This is due to the world gas delivery structure. There are more short-term gas contracts indexed in the spot market and fewer contracts indexed in long-term contracts with take-or-pay clauses. Gazprom's policy, however, is based on long-term contracts with take-or-pay clauses. The rapid increase, however, of US LNG exports (along with the increased capacities in Qatar, Australia, Russia, Canada and other countries) has the potential to disrupt global gas trade patterns and dramatically transform the European market over the next two decades. They could also reduce Europe's dependence on Russian gas, even as Moscow increases subsidies for gas exports to Europe. The slash in Russia's gas export revenues has already forced its gas companies to renegotiate contracts with much shorter and more flexible terms. Energy experts estimate that if the US increases exports to Europe, Russia might be forced to raise subsidies and lower prices even further (Umbach, 2019). Thus, gas prices in Europe could come under downward pressure.

undersea pipeline to Turkey and from there to European markets. From there Israeli gas would feed into Turkey's national grid, reaching the giant domestic Turkish market, and join the Trans-Anatolia Natural Gas Pipeline (TANAP). Despite serious considerations about whether Erdoğan's Islamist regime should be a linchpin in Israel's natural gas export strategy (Solomon, 2016), this option looked very appealing as it could be the most economic viable option. However, schemes for a pipeline across Cyprus or on the seabed through its EEZ are hampered by continued failures to resolve the island's disputed 1974 partition. Furthermore, Turkey's diplomatic hostility toward almost all countries in the region is also a problem. Even if Turkey and its neighbours (especially Egypt, Israel and Syria) could overcome their own differences, Arab-Israeli hostilities rule out a path through Lebanese and Syrian waters. An alternative route close to Cyprus is also no easier given Nicosia's fraught relationship with Ankara, which supports the breakaway Turkish part of the island (Saleh, Srivastava, & Ward, 2018b).[8] At the same time, even though a pipeline to Turkey does make economic sense, the security concerns that Turkey faces nullify any economic advantage. Indeed, the danger of potential internal instability looms in Turkey, related to the increasing polarisation of political and social attitudes, which prompt serious concerns in the Western business community about Turkey's internal security situation. In addition, given that the Eastern Mediterranean region constitutes a credible alternative source with the potential to help EU diversify its energy sources and reinforce its supply and energy security, it would be wise for Europe if the Fifth Corridor of gas (namely the East Med) is not transported via Turkey, as in the case the Fourth Corridor gas (TANAP and TAP pipelines). Otherwise, EU energy security will be compromised (Marketos, 2018).

The Current State of Play in the Eastern Mediterranean Region

Two major dynamics have had a significant influence on thinking of several export options for the natural gas discoveries in the Eastern Mediterranean region : multilateral cooperation, on the one hand, and the unilateral decisions taken by Turkey, on the other.

a. Multilateral Cooperation

The energy ministers of Egypt, Cyprus, Greece, Israel, Italy, Jordan and Palestine established the Eastern Mediterranean Gas Forum (EMGF) on 14 January 2019. This forum, the first of its kind in the Eastern Mediterranean region, is intended to be the umbrella for cooperation and dialogue regarding the development of gas resources in the region. It will help its members benefit from their natural resources and infrastructure.

8 In considering the transit of pipelines through the EEZs of Eastern Mediterranean states, the main point is simply that, although the owners of an EEZ cannot legally refuse permission for third parties to build such lines, they have the right to require full environmental impact assessments, and to play a role in determining the exact route that such a line should take. This, in theory but not in practice, ensures that their cooperation must be secured for the development of such pipelines.

This Forum is the first link of its kind following the tripartite alliances that Egypt and Israel have each forged with Greece and Cyprus during the last decade, and the result of the gas export deal between Israel and Egypt signed in February 2018, as well as Egypt's desire to become a regional energy hub, based on its gas liquefact on facilities (Winter & Lindenstraus, 2019). This Forum seeks to achieve the common interests of its members by establishing a regional natural gas market, and rationalising the cost of infrastructure for the export of natural gas, thereby increasing the competitive sale of gas in overseas markets. To this end, it was apparent that common interests would pass through sensitive areas of conflict between the Palestinians and the Israelis. They became members of a single gas forum, both of which began to invest in productive areas. This Forum also reflects the willingness of these countries to initiate an international organisation that respects the rights of members regarding their natural resources in accordance with the principles of international law and supports their efforts to benefit from their gas reserves and infrastructure in order to secure their energy needs for the well-being of their peoples.

Although the EMGF represents an advance toward a zone of mutual prosperity that seemed unimaginable a few years ago, the absence of Turkish, Syrian and Lebanese representation at EMGF is a reminder that larger geopolitical struggles still dominate the region. Their absence is not surprising, given the disputes surrounding gas fields between Turkey and Cyprus and between Israel and Lebanon and the continuity of civil war in Syria. In addition, the EMGF has drawn criticism from some nationalist and Islamist circles in Egypt and from trade unions in Jordan, who are against the promotion of normalisation with Israel before reaching a just and permanent peace agreement between Israel and all its Arab neighbours, as expressed in the formation of a regional body that includes Israel alongside Arab countries.

In spite of this criticism, there are a number of factors helping EMGF in promoting gas multilateral cooperation: the deep economic interests behind cooperation on energy; the restriction of the Forum to specific issues regarding gas; Egypt's determination to establish its position as a regional energy hub, the participation of the Palestinian Authority in the Forum, which also gives more legitimacy to the Jordanian and the Egyptian membership; and the active support of Greece, Cyprus, Israel and Italy for the Forum.

In addition, multilateral cooperation in the Eastern Mediterranean region has been strongly endorsed by the backing of the EU and the US. Both sides believed this cooperation is an important turning point in the relations between the exporting, importing and transiting natural gas countries in the Eastern Mediterranean region. The EU source

and route diversification energy strategy coincides with Washington's long pursued aim of putting an end to Moscow's tactic of using its hydrocarbons exports to exercise economic and political influence in Europe. In that sense, both the US and the EU favour the emerging energy cooperation, with the defence-economic alliance, with a well-shaped military character between Israel, Cyprus and, by extension, Greece (Sotiropoulos, 2016).

At the same time, it becomes clear that the interests of the EU, the US, and regional countries (with or without energy resources) are to cooperate by utilising the existing Egyptian LNG infrastructure for the export of Eastern Mediterranean gas. A report from the European Parliament in 2017 stressed that Egypt appears to hold the key to the future of Eastern Mediterranean gas (Tagliapietra, 2017b). Egypt would be the lowest-cost option for exporting the region's gas and can easily transfer gas to Europe and Asia via the Suez Canal. While no pipeline exists to re-export gas from Egypt, the country has two idle gas liquefaction plants that would enable it to start re-exports with little or no infrastructure investment. Given both Israel's and Cyprus' delicate geopolitical situation – a reference to Turkey, Lebanon, Syria, Iran and the Palestinians – Egypt offers Israel and Cyprus the most politically stable option for exporting their gas. Furthermore, it could also provide the first opportunity to test gas cooperation between Europe, Israel, Greece and Cyprus. That cooperation could eventually scale up in the 2020s should new gas resources be found in the region and should gas demand in export markets justify the construction of additional infrastructure, such as an Israel-Cyprus-Italy pipeline (Tagliapietra, 2017c).

b. Turkey's Role in the Eastern Mediterranean

Despite the growing multilateral cooperation among Eastern Mediterranean countries, the EU and the US in order to promote gas monetisation in the region, there has been an opposing force that disturbed such cooperation in 2019. This force is Turkey, which has chosen to throw down roadblocks to improving energy relations in the region. Turkey has challenged Cyprus' right to drill. It also began to talk about the "historical rights" of Turkish Cypriots in the TRNC, which did not receive any international recognition of its existence other than from Ankara (CIA, 2018). In February 2018, Turkish warships forced a drilling vessel operated by the Italian energy company ENI to stop work in Cypriot waters and the summer before Ankara harassed vessels belonging to ENI and France's Total. It even warned ExxonMobil to stay away from Cyprus but, with the US Sixth Fleet nearby, Turkey did not act on its threats (Rosenberg, 2019). In January 2019, Turkish President Recep Tayyip Erdoğan emphasised in a speech at the Ankara Military Academy: "If you don't have enough military, political and economic might, you should know that

nobody will take you seriously" ("Erdogan Underlines Turkey's Military Might", 2019). This was followed by two massive demonstrations of Turkey's maritime power in February and May 2019, the "Blue Homeland" and "Sea Wolf" drills in the Black Sea, the Aegean Sea and the Eastern Mediterranean.[9]

Turkey has also begun exploration for gas in the Eastern Mediterranean region without any agreement with the riparian countries. On 3 May 2019, Turkey started to send its government-owned drill ships, the Fatih, the Barbaros and the Yavuz, with a naval escort, to explore for gas in Cyprus's EEZ, despite protests from the US, the EU, Greece, France and Egypt. Cyprus President Nicos Anastasiades termed the Turkish move a "second invasion" after Turkey's 1974 occupation of the northern third of the island country (Rosenberg, 2019). In May 2019, the US State Department issued a statement urging Turkey to reconsider its decision to drill offshore Cyprus. The US's statement mentioned that such actions exacerbated regional tensions and called on Turkey to halt drilling operations ("U.S. Urges Turkey to Halt Drilling Operations", 2019). Erdoğan responded by demanding that North Atlantic Treaty Organization (NATO) give its full backing for Turkish "rights" in the Mediterranean. The Turkish president also met the EU sanctions, which were imposed after Turkish provocations in Cyprus's EEZ, by insisting on continuing the Turkish illegal activities in the Eastern Mediterranean region.[10]

To deal with the Turkish provocations under President Erdoğan , Nicosia and Athens decided to proceed with the build-up of a trilateral/tripartite strategic alliance with Egypt and Israel, which includes energy, political, military, economic and cultural cooperation.[11] Undeniably, the energy geopolitical factor is the qualitative dynamic catalyst in these tripartite allied relationships impacted by geography, since Egypt, Israel, Cyprus and Greece have contiguous EEZs, in which large volumes of energy resources have been, or are expected to be, discovered, and are working on the potential construction of the East Med pipeline, a project of mutual strategic benefit (Marketos, 2018).

To summarise, these two current dynamics in the Eastern Mediterranean region – multilateral cooperation, on the one hand, and the unilateral decisions taken by Turkey, on the other – may fuel conflicts between the Eastern Mediterranean countries to control the enormous wealth these discoveries represent. This pessimistic assessment is supported by historical experience revealing that the conflict over natural resources –

9 "Sea Wolf" drills was considered the largest naval exercise in the history of the Turkish Republic with the participation of 26,000 soldiers, 131 naval vessels, 57 warplanes and 33 helicopters.

10 The only demonstration of hard power has come from France, which has agreed with Cyprus to upgrade a naval base to accommodate larger warships such as an aircraft carrier. Erdoğan, in turn, has told French President Emmanuel Macron he has nothing to do with Cyprus and has no right to speak on the Cyprus issue. However, France does through the partnership of French firm Total and Italian company Eni exploring in two blocks of Cyprus's EEZ, as does the US (Noble Energy and ExxonMobil), Qatar, (Qatar Petroleum), South Korea (Kogas), the United Kingdom (UK) and the Netherlands (Shell) and Israel (Delek Group), all exploring in the area (Ellis, 2019).

11 For example, Egypt, Greece and Cyprus have enhanced their cooperation on a large number of issues related to security, stability and economic development in the Eastern Mediterranean region. As a result, the three countries achieved significant progress in the fields of defence, security, energy, investment, tourism, environment, culture and education along with confronting terrorism and illegal migration (Joint Declaration of 7th Trilateral Cooperation Mechanism Summit Among Egypt, Cyprus, Greece, 2019).

primarily water and energy – has always been a source of multiple international and civil conflicts, such as the US invasion of Iraq.

Future Trends

Exporting gas from the Eastern Mediterranean region through pipelines constitutes a qualitative catalyst in the strengthening and deepening of the cooperative relationship between Egypt, Greece, Cyprus and Israel in the long term, on the one hand, and will increase EU energy security, on the other. In this context, Egypt, is likely to be a "gas hub" in the Eastern Mediterranean region, a concept that allows it to import, produce, consume and export gas, thereby benefiting from shifting between multiple suppliers and customers depending on the best price. Egypt's two huge liquefying facilities in the Mediterranean (in Idku and Damietta) would allow Israel and Cyprus to export their gas without having to construct their own terminals. The option of exporting gas from Israel and Cyprus to Egypt through pipelines is also theoretically possible if it could overcome the price barrier. Current shifts in global energy production and consumption indicate low prices for energy commodities in the coming years. "Lower for longer" is the new mantra. Egypt, Israel and Cyprus will have to compete with these low gas prices, on the order of 6-7 US dollars per mmBTU, at least until 2025, if the various export projects currently being considered are to become commercially viable (Ellinas, 2019).

For the EU, the materialisation of an Eastern Mediterranean gas hub based on Egypt's LNG infrastructure would be beneficial for both energy policy and foreign policy considerations, providing substance to the long-lasting EU gas supply diversification strategy and functioning as a catalyst for sensible regional dialogue, and most importantly keeping Russia away from acting as a political arbiter for the whole region.

However, the quest for the Eastern Mediterranean's gas will likely lead to a significant increase of tension and military activities in the area, thus creating an unstable scenario where the great powers' interests (especially those of the EU, the US and Russia) as well as those of regional powers are bound to collide. The US and Russia, respectively the world's largest and second-largest producers of natural gas, are both poised to play a vital role in brokering (and benefiting from) the upcoming "Eastern Mediterranean Game". These developments have, however, been halted by the severe plummeting of the oil prices in spring 2020. At the same time, the growing crisis between the US and Turkey illustrates the complexities that will arise from the ongoing honeymoon in Turkey's relations with Russia and Iran. On the other hand, Washington's absolute bias towards

Tel Aviv may impose an unfair Israeli vision of Lebanese maritime rights, and thus increase the possibility of Hezbollah of Lebanon fulfilling its claims to protect Lebanese sovereignty over its territorial waters by attacking the Israeli gas facilities. The impact of this threat increased recently with the growing possibility of confrontation between Iran and Israel after the US's withdrawal from the nuclear deal with Tehran. Nevertheless, the domestic economic crisis in Lebanon that materialised in early 2020 has so far acted as a brake to these confrontations with Israel.

Against this backdrop, a great deal of uncertainty reigns in the Eastern Mediterranean region. There are two possible scenarios in the making: the first is the path towards isolating Turkey, while the second is the increased likelihood of military clashes as a result of Turkish actions in the broad region. Turkey's proactive posture in Libya since the beginning of 2020 as well as its illegal drilling activities in the Cypriot territorial waters are important game changers in this regard.[12] In spite of initial signs of uneasiness by top EU policy-makers vis-à-vis Turkey's moves to send military experts and trainers to Libya, condemning them as signs of further foreign interference in the already conflict-ridden country, the developments that took place in spring 2020 and saw the prevailing of the Libyan political and military forces supported by Turkey demonstrate that the second scenario, i.e., military clashes throughout the Eastern Mediterranean, would be more likely than the isolation of Ankara on the regional chessboard (Nadhif, 2020).

It is not new for the Middle East to have a conflict over natural resources such as water, oil and gas but the difference is that this tension, and possible conflicts, comes after a period when cooperation in the Eastern Mediterranean region seemed more likely than conflicts, thanks to the huge natural gas discoveries. Here, the following questions arise: is there any way to cool the current situation and keep it away from the point of explosion? And is there light at the end of the tunnel?

Answering these two questions is not easy. The issue of so-called "peace pipelines" has been debated for a long time. Experience of conflicts in the region casts doubt on the idea that cooperation in such complicated issues as natural resources and gas pipelines will ever produce peace agreements. In fact, it seems to be the other way around. Peace agreements should ideally precede cooperation on gas infrastructures and pipelines. Political stability also implies that governments have a long-term vision on how to make best use of the discovered gas and the money that will flow from its exploitation.

Under these circumstances, fresh ideas and thinking outside the box should be developed regarding the following five areas:

12 On 27 November 2019, Turkey and the Fayez al-Sarraj government in Tripoli signed imby many actors in the international community as a clear violation of international law and of the 2015 Skhirat agreement.

1. How to build confidence over gas infrastructure and pipeline issues in the context of the Cyprus settlement and the deal between Turkey and Libya related to the military and maritime border cooperation;

2. How to deter Turkey, under President Erdoğan , from continuing its provocative and illegal activities in the region;

3. How to frame and develop the necessary cross-border energy infrastructures between Egypt, Cyprus and Israel;

4. How to devise mutually beneficial regulatory frameworks for investments and environmental protection in the region; and

5. How to address the conflicts between Cyprus and Turkey, Greece and Turkey, and Lebanon and Israel over their EEZs.

Without answering these questions in innovative ways, the EU will not likely be able to overcome its vulnerability to gas supply disruptions, whether caused by geopolitical conflicts, political or commercial disputes, infrastructure failure or other reasons.

Policy Recommendations

The prospect of a new gas export hub opening up in the Eastern Mediterranean region is particularly attractive for the EU, which, as explained above, is worried about its growing dependence on Russia. The new resources could provide an additional energy supply for the energy-suffocated European markets and increase the diversification opportunities for countries dependent on a single supplier (European Commission, 2016).

The EU should therefore be more actively engaged in promoting the development and protection of energy infrastructures in this region. There are a number of important areas where the EU could leverage its diplomatic power and use the gas reserves as a catalyst to enhance its energy security. Such measures include: a) mediating maritime disputes between Lebanon and Israel; b) reviving negotiations between Cyprus and Turkey; c) supporting the Palestinians in their effort to access their own natural resources; and d) encouraging Turkey and Israel to join the United Nations Convention on the Law of the Sea (UNCLOS) of 10 December 1982.

In addition, the EU should also work on convening a global conference for the Eastern Mediterranean countries to discuss the establishment of a collective framework agreement regulating the exploitation of natural gas resources. Such a conference will likely contribute significantly to building trust among the countries and peoples of the Eastern Mediterranean region. It could also open the dialogue with Turkey on the future of natural gas in the region at all levels (governmental and non-governmental) as part of a confidence-building strategy.

Furthermore, the EU, based on its unique experience, could play a potential role in helping the Eastern Mediterranean countries to build the proper administrative and regulatory framework for the regional gas infrastructures and to create integrated gas and electricity markets around the Mediterranean. Many countries in the region do not have a real experience in the field of building and operating the regional gas infrastructures. In this context, the EU could also play a significant role in the process of making the EMGF, the newly-established regional institution for facilitating the cooperation in the gas field, operational.

The environment seems to be another potential area of contribution from the EU. A dialogue process on monitoring and crisis management regarding increasing hydrocarbon developments could be established, with wider regional implications, and contributing to the development of an Eastern Mediterranean Environmental Regulation regime regarding increasing the hydrocarbon potential of the region. With its already existing environmental regulation procedures and mechanisms, the EU could play a leadership role in convincing the parties to take constructive steps in establishing the right regulations and standards for the protection of the environment. Last but not least, the EU should also encourage think tanks in the Eastern Mediterranean region to carry out joint research projects aimed at exchanging experiences related to natural gas infrastructure projects.

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What's in a Name? MENA Flag Carriers as Instruments of Soft Power

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In recent decades, some of the airlines in the Middle East and North Africa (MENA) region have embarked upon unprecedented growth trajectories, causing a major shift in global air transport, altering traffic flows and spurting mega hubs across the Gulf, Turkey and, to a lesser extent, Morocco. Perhaps most telling for this dramatic rise are the figures on Europe-Asia routes: in 2006, Frankfurt, Amsterdam and Paris were the top three connecting airports on one-stop flights; 10 years later they were Dubai, Doha and Istanbul (Dichter, Hahn, & Maxwell, 2016). The consequences of such a shift go well beyond the aviation industry – just think of where corporate headquarters are located, international conferences and sports events hosted, and holidays booked (O'Connell, 2011). It is questionable that these developments, often firmly driven by MENA states with high stakes in their airlines and airports, were spurred by commercial considerations alone. Instead, one could argue that behind the rise of Emirates, Etihad, Qatar Airways, Turkish Airlines and Royal Air Maroc (RAM), and the hand-in-hand expansion of Dubai, Abu Dhabi, Doha, Istanbul and Casablanca airports, there is also a political agenda. Indeed, aviation may serve as an effective soft power tool in the hands of national authorities, enhancing their ability to connect globally but also boosting their authority domestically and regionally.

This chapter will explore the political stakes in the region's civil aviation sector. Commercial factors aside, what has been driving the growth of MENA carriers in recent years? What are the key players involved, how do they operate, and what issues do they face? What are the key motivations of MENA states to invest so heavily in their aviation businesses? If this is indeed driven by geopolitical interests, as this chapter argues, what does that mean at a national, regional and global level? Lastly, this chapter will look at the implications for Europe.

A Star is Born

The MENA's aviation history can be divided into two chapters. The first consists of national carriers created around the time of independence and in some ways representing statehood. Inheriting aviation infrastructures from former colonial powers, and supported by the rents of newly-discovered oil reserves, MENA states saw the development of their aviation sectors as potential tools for boosting their prestige. Commercial considerations, if taken into account at all, came second. For most of the 20th century, the MENA aviation market, spearheaded by carriers such as Gulf Air and Kuwait Airways, remained rather negligible, however. European and Asian carriers mainly saw in the region a convenient stop for refuel purposes on long-haul flights, while carrying

limited amounts of traffic to and from these destinations. It was not until Dubai-based Emirates, Doha-based Qatar Airways and Abu Dhabi-based Etihad, born in 1985, 1994 and 2003 respectively, embarked upon their awe-inspiring growth trajectories that the region became a serious player in the global aviation market. And serious it became.

The increasing deregulation of civil aviation in the 1990s, leading progressively to "open skies" for commercial airlines, coupled with the elimination of fuel stops by European and Asian airlines on flights across Eurasia, marked the beginning of the startling ascent of Gulf carriers in the global aviation market. Frontrunner Emirates was born out of dissatisfaction by the rulers of Dubai, the Al Maktoum family, with Gulf Air after the pan-Gulf carrier more than halving the number of flights to the Emirate in the early 1980s. Equipped with two of the royal fleet's Boeing 727s and a fund of EUR 9 million by the Al Maktoum family, Emirates kicked off its ascent. Making clever use of labour migration to the Gulf, Dubai's carrier first focused on Karachi, Mumbai, Delhi, Colombo and Dhaka; then on regional markets such as Cairo, Amman and Istanbul. In 1987, key destinations in Europe were added, including London and Frankfurt, as well as in East Asia. By 1995, Emirates had established a network of 30 destinations (Ulrichsen, 2015). The impressive growth did not go unnoticed and, inspired by its neighbour, Qatar's ruling family also launched its own airlines. In less than 10 years, Qatar Airways grew its aircraft count from four in 1997 to no less than 50 in 2006, therewith paralleling its rival. The third star in the Gulf, Etihad, was not born until well into the new century: established by royal decree in 2003, Abu Dhabi ambitiously set out to compete with its regional and global counterparts. Again, not without success: within three years, the carrier was equipped with a 24-aircraft fleet to serve 40 destinations.

Growth extended to the Gulf countries' airports, too: handling 86.4 million passengers in 2019, Dubai has been the region's absolute star. Even more remarkably, for six consecutive years Dubai International Airport has been the world's busiest airport for international passenger traffic. Doha's Hamad International Airport and Abu Dhabi International Airport – until recently, at least – have not been doing bad either, handling 38.8 million passengers in 2019 and approximately 20 million passengers in 2018, respectively ("HIA sees record 38.78mn passengers", 2020; Hammond, 2020). What is more, the Gulf airports were set to expand in the coming years, with Dubai building a new airport designed to accommodate 320 million passengers per year in 2050, Doha aiming at 53 million passengers annually by 2022, and Abu Dhabi soon opening a terminal that is to accommodate 45 million passengers yearly ("HIA to handle over 53mn passengers", 2019; "No rush with Abu Dhabi's Midfield terminal", 2019). That said, plans could be changed in light of the current crisis.

The MENA aviation game is not played by the United Arab Emirates (UAE) and Qatar only. In recent decades, some of the region's older airlines – established long before the Gulf's big three – have undergone impressive transformations. Most remarkable is one of the region's most elderly carriers, Turkish Airlines, founded as early as 1933 but witnessing explosive growth since the 2000s. It not only increased its domestic passenger number from 9 million in 2002 to 85 million in 2015, but Turkey's flag carrier also almost aggressively expanded its presence abroad – and numbers show that its competitiveness is no less than on a par with that of the Gulf airlines. Moreover, its recent yearly passenger growth of 10% is unmatched. The expansion is mirrored by its main international air traffic hub Istanbul: with nearly 50 countries within a three-hour flight, the recently opened airport is set to eventually handle 200 million passengers annually – a target it was well on its way to reaching up until 2020 considering Istanbul Airport's consistent presence in rankings of fastest growing passenger transport hubs (Pitel, 2018). Meanwhile, at the other end of the region, another "old generation" airline, Royal Air Maroc, succeeded in re-inventing itself with the dawn of a new century, transforming Morocco into an important hub between Europe and Africa. Mohammed V International Airport, located in Casablanca, is now the fifth largest hub on the African continent, welcoming close to 10 million passengers in 2018. Flag carrier RAM transports passengers from Morocco, Europe and Africa via here to almost 80 destinations worldwide (Vloeberghs, 2015). Finally, an old-guard airline in the region that is often ignored but nevertheless ranks amongst MENA's giants in terms of passenger traffic and revenue is Saudia (previously Saudi Arabian Airlines) – an airline twice as big as Etihad. The flag carrier, however, firmly depends on Saudi Arabia's domestic market, with nearly 50% of its passengers boarding domestic flights ("Middle East Aviation Outlook 2019", 2019).

Meanwhile, in Europe, the success of these MENA airlines and hubs did not leave their "status quo" counterparts unscathed. In the period 2006-2016, Europe's main carriers British Airways, Air France, KLM and Lufthansa saw their collective passenger share on Europe-Asia routes fall from 29 to 20%, while that of Emirates, Etihad, Qatar Airways and Turkish Airlines more than tripled, from 9 to 28% (Dichter, Hahn & Maxwell, 2016). Elsewhere, too, aviation markets suffered from the fierce competition presented by the MENA rivals.

That said, the region's aviation players, while remarkably resilient, are not immune to the environment they operate in. Following a series of terrorist attacks and a failed coup in 2016, tourism to Turkey dropped sharply, forcing its airlines to rely more heavily on transit business, with passengers passing through but not stopping in Istanbul. In light of this

shift in strategy, the move from the 1950s-era Ataturk Airport to a new mega hub, set in motion a few years before 2016, has not been unwelcome. As for the Gulf carriers, their growth trajectories have not been without setbacks either. Following the blockade by Egypt and various Gulf countries, Qatar Airways lost 19 routes and 60 flights per day. But the airline was not just a victim; it allegedly also played a role in the crisis' onset: its growth rate of 20% a year has been interpreted as aggressive by Etihad and Emirates ("Diplomatic crisis 'will not block Qatar Airways' growth", 2018). Other hurdles faced by the region's players include the laptop ban, after which Emirates reported a 35% decrease in transatlantic traffic, American-imposed travel restrictions on Muslim-majority countries, regional conflicts and quarrels resulting in inter alia fluctuating oil prices or the avoidance of airspace such as after the downing of a United States (US) military drone by Iran in June 2019 (Ghafar & Leber, 2017; Piven, 2019). Morocco's aviation sector's growth experienced a setback following the unrest spreading across North Africa and elsewhere in the region from 2011 onwards, as passenger demand fell back (13% in the first half of 2011 alone). Moreover, in some cases regional or global tensions have stymied MENA states' aviation potential altogether: Israel's regional isolation and the international sanctions regime against Iran are key examples. For the latter, the embargo prohibiting Iran to buy aircraft with at least 10% US-origin parts has been particularly crippling, rendering even the purchasing of Russia-made planes nearly impossible. But sanctions also include the provision of technical assistance to Iranian planes abroad, with some airports even refusing to refuel the country's aircraft. Following the conclusion of the Joint Comprehensive Plan of Action (JCPOA) in 2015, and the subsequent easing of sanctions, Iran ordered no fewer than 200 aircraft from Western manufacturers – of which only three Airbus jets and 13 French-Italian ATR turboprops were delivered before November 2018, when the US reinstated all sanctions against Iran (Nadimi, 2019).

Undoubtedly the largest crisis affecting the aviation players of the region (and beyond) has been the Covid-19 pandemic that has swept across the globe since early 2020. During the first quarter of 2020, passenger traffic in the Middle East fell by 28.1% and airport revenues by 33.3% as compared to previously projected volumes and revenues – with only the Asia-Pacific region doing worse. For the year 2020, projections are even grimmer: according to one estimate, the yearly passenger traffic volume in the Middle East will decrease by 46.9% as compared to previous pre-Covid-19 forecasts (Airports Council International, 2020). To compare, the annual passenger reductions for Europe, Asia-Pacific and North America are projected at -57.1%, -52.9% and 41.1%, respectively. Meanwhile, compared to pre-Covid-19 forecasts annual total airport revenues are expected to drop by 53% in the Middle East, and by 62.6% in Europe, 58.9% in Asia-Pacific, and 47.3% in North America. If these projections prove right, the Middle East's aviation sector is the third most affected globally.

That said, at times MENA airlines have managed to take advantage of global crises having a hard effect on their competitors: following the 9/11 terrorist attacks and the economic crisis of 2008-2009, Emirates continued to expand against industry trends. While European and American counterparts were forced to downsize or implement other measures to deal with the drop in demand, Emirates added new routes and increased frequencies on existing ones as part of its strategy (Lebel, 2019). Moreover, various MENA states have profited from regional conflicts in neighbouring countries by charging overflight fees – adding up to hundreds of millions of euros on a yearly basis for Iran for example (Nadimi, 2019).

Modus Operandi: Tricks of the Trade

Gulf-based airlines operate more or less along the same lines: because they are generally small in terms of population, their passenger markets lie outside their home countries. In addition, the tourist attraction of the region remains limited. This means that their strategic aim is by default international, putting it in competition with other international carriers – and of course, one another (Green, 2016). The Gulf's geostrategic location helps: 80% of the world's population lies within an eight-hour flight of its hubs, including the rapidly growing Chinese and Southeast Asian markets. Thanks to the Sixth Freedom of the Air (one of a set of aviation rights), which allows carriers to land passengers in one's home country on the way to another destination, Gulf carriers were quick to expand according to the so-called hub-and-spoke model. The resulting cost-and-time-effective resource utilisation on Europe to Asia routes is unparalleled: using only six airplanes, Gulf-based carriers can serve three European and three Asian cities in one day. Quickly do the maths and find nine daily routes connecting Europe and Asia. With the same amount of aircraft, European and Asian airlines can offer four non-stop flights in the same amount of time (Ping Ching Fan, 2019).

Taking full advantage of this transit model, Gulf carriers generally operate much larger aircraft than other airlines. Indeed, if it was not for Emirates and to a lesser extent Qatar Airways and Etihad, aircraft manufacturer Airbus' iconic superjumbo A380 would likely not have been built – and many other wide-body orders not been made. Also of undeniable importance are the Gulf carriers' highly competitive cost structures: cheap labour imported from South-East Asia, the absence of unions, bans on labour strikes, and a younger workforce render labour relatively inexpensive, while the shorter supply chain to nearby oil reserves and younger aircraft keep the fuel and maintenance costs down. Not to mention their remarkably effective branding strategies, outstanding service provision, geographical diversification of ticket sales, large aircraft orders resulting in

discounts, and the rapid expansion of flights to "secondary" airports, emerging markets and destinations overlooked by status quo carriers (Ulrichsen, 2015). While the hub-and-spoke model remains without a doubt the central pillar of their business strategies – in stark contrast to Saudia, for which Sixth Freedom traffic accounts for less than 2.5% of all transport ("Middle East Aviation Outlook 2019", 2019) – some of the Gulf airlines are also starting to tap into the potential of Fifth Freedom of the Air flights, whereby neither departure nor destination is in one's home country. The first of this kind was until recently operated by Emirates from Milan to New York (Ghafar & Leber, 2017).

Yet the growth strategies of Emirates, Qatar Airways and Etihad are not identical. To a far larger extent than any of its neighbouring hubs, Dubai city was marketed as an international shopping and mass tourism destination. This worked both ways: the growing appeal of Dubai as a tourist destination increased the passenger pool of Emirates, which simultaneously enabled the growth of Dubai through effective marketing strategies such as the launch of Emirates Holidays in 1992. The Qatari authorities, meanwhile, decided not to copy the Dubai model of branding their capital as a mass tourism destination but instead imagined Qatar Airways' home base Doha to function predominantly as a transit hub, with a business audience as the main target group. As such, Qatar's capital became a key location for conferences, (sports) events, and, not unimportantly, big multinationals and global corporations' headquarters. Etihad, too, followed a path of its own: forming alliances with – often European – airlines in bad conditions, it managed to connect its home base Abu Dhabi to a large number of "spokes". Key equity alliances include Alitalia and Air Serbia, Air Seychelles, the Swiss Darwin rebranded as Etihad regional, Air Berlin, Virgin Australia and India's Jet Airways (Ulrichsen, 2015).

Contrary to its Gulf counterparts, Turkish Airlines benefits from a large domestic population, and it managed to effectively tap into a fast growing Turkish middle class. Ascribing the airline's success story in recent decades solely to this does not give it enough credit, however. Sandwiched between Europe and Asia, Turkey has made excellent use of its geographical location, and the hub-and-spoke model has proven highly effective here too. Thanks to its close proximity to Europe, but also North and East Africa and Central Asia, Turkish Airlines is able to use smaller narrow-body aircraft, resulting in lower fares and higher flight frequency. Unsurprisingly, the resulting flexibility is very much welcomed by business passengers and tourists alike ("Turkish Airlines takes on Emirates", 2019). Not unimportantly, 201 of Turkish Airlines' current 255 international destinations are within narrow body range of Istanbul, but the carrier serves wide body destinations too, notably in North, Central and upper South America, Asia and Western Australia ("Turkish Airlines SWOT", 2018). More than half of its passengers are on routes

to and from Europe. While its presence is heavier in Africa, Latin America and the Middle East compared to that of its Gulf rivals, it is outplayed by them in the Asia Pacific. Furthermore, Turkish Airlines benefits from a young fleet – just like its Gulf counterparts –, adding to its efficient cost structure and customer appeal. Also in terms of quality, the carrier has increasingly made a name for itself. This has not always been the case: several decades back, passengers joked that Turkish Airlines' acronym THY stood for "they hate you", thanks to its rather suboptimal service provision.

For Morocco's aviation market, reliance on Europe is traditionally heavy, and continues to be so: 70% of its passengers fly from or to destinations here, and many from and to France (Vloeberghs, 2015). Indeed, its colonial history and present-day diasporic reality are of key importance in Morocco's aviation industry. Not unimportantly, the conclusion of an open skies agreement with the European Union (EU) in 2006, the first of its kind with a non-European country, marked a turning point, increasing traffic between Morocco and the EU by 80% in 10 years, while the number of city pairs doubled, and average ticket prices dropped by 60% (European Commission, 2020). But it is not just about Europe: RAM's expansion has also heavily focused on the African continent. Between 2004 and 2019, the number of African destinations served by the Kingdom's carrier increased from 7 to 34 destinations, most of which located in West Africa[1] (Kadiri, Lepidi, Wuilbercq, & Maillard, 2019). Indeed, Moroccan authorities have increasingly directed their aviation strategy towards positioning the country as an international transfer hub – a decision that has been accompanied by similar growth in the country's maritime, railway and road infrastructures. What is more, aviation played an increasing role in the marketing of Morocco as a mass tourism destination.

More to the Story

While crucial, the success of the MENA aviation market is not simply spurred by clever business strategies in an increasingly interconnected world. Certainly, competitive advantages over more established markets such as the European have enabled the big four's unwavering success, while enabling a more modest spurt for Morocco's national airline. Still, commercial considerations do not tell the full story. Rather importantly, most MENA airlines are state-owned, with technicalities regarding ownership varying from country to country. This fact, compounded by the highly strategic geographical location, cheap labour and other competitive advantages, has led the old guard American and European airlines to accuse their Gulf counterparts of benefiting from unfair advantages. The argument goes that these carriers, backed by their governments, do not have to

1 According to RAM's official website, accessed on 8 January 2020, the airline appears to be serving 24 destinations in 22 African countries.

worry about short-term profit, not least enabling them to offer lower fares. Claims regarding unfair subsidisation, made by the three major US carriers Delta, American Airlines and United Airlines but European market leaders Air France-KLM and Lufthansa have also been found largely unsubstantiated – not least because the status quo flag carriers also have strong ties with their respective governments. The Covid-19 pandemic has made this all the more clear: a few months into the crisis, the French government approved EUR 7 billion worth of state aid to Air France while the Dutch announced a rescue package of EUR 3.4 billion for KLM (Sterling & Deutsch, 2020). Meanwhile Lufthansa agreed on a EUR 9 billion rescue deal in exchange for 20% in shares ("Coronavirus: Lufthansa agrees on €9bn", 2020). Such actions are not limited to exceptional crises like Covid-19: the increase in KLM shares by the Dutch government in 2019 is but one example. So what do these close relationships reveal about the national stakes in the flourishing of aviation markets?

Quite revealing indeed are the figures for aviation sectors' effects on national economies, both in direct and indirect terms. An Oxford Economics study measuring the direct, indirect, induced and tourism benefits of Emirates, the city's airports and the sector as a whole to the Dubai economy found an overall contribution of 26.7% in GDP in 2013. As such, the sector contributed 21% of Dubai's total employment – the equivalent of 416,500 jobs (Oxford Economics, 2014). But the impact of aviation can even be measured beyond these indicators, when one takes into account the spill-over effect on other segments of the economy (beyond tourism). Another Oxford Economics study did just that: linkages created by flag carriers and hubs – also often referred to as "connectivity" – provide Dubai-based companies with greater access to foreign markets, therewith increasing export revenues. Such an increased international presence spurs innovation as businesses compete globally, then driving productivity. Not to mention the impact of increased investment, capital, and worker flows on a country's economy. Indeed, better connected economies experience faster economic growth, especially in the long term (Oxford Economics, 2011).

The economic rationale appears particularly convincing in the case of Dubai. Looking at figures for the UAE as a whole, aviation is a more modest contributor to the national economy, albeit far from non-existent: it is good for 800,000 jobs and USD 47.4 billion, the equivalent of 13.3% of GDP (IATA, 2019). In the oil-rich Emirates of Qatar and Abu Dhabi, aviation's contribution to the overall economy remains marginal, although it is no coincidence that Etihad was born in the same year that Abu Dhabi launched its first economic diversification strategy. Without disregarding key benefits for their business sectors, and some limited tourism revenues, the limited economic profitability of Etihad and Qatar Airways suggests there is more at stake.

Airlines: Waving the National Flag

Indeed, a closer look at MENA aviation markets, but also beyond, suggests that national governments also put political motivations in the balance. This is not surprising: aviation has often been associated with "soft power", a concept that was coined by Nye (2004) to describe states' ability to influence the behaviour of others through appeal and attraction rather than coercion (which constitutes "hard power"). Tools of soft power include literature, art, education and popular culture, but also commerce has the ability to transmit values and norms, and as such to win the hearts and minds of the people. Not unimportantly, Nye stressed the importance of personal contacts, visits and deepened exchanges in the conduct of public diplomacy, and this is where the aviation sector comes into play. Through connecting people from all parts of the globe, transporting them on a flag carrier via national air hubs, a country is able to boost its own brand as a modern and prosperous nation. Indeed, through aviation, countries can position themselves as flag-bearers of the liberal world order. McClory (2014) rightly points out that: "never before has the ability of a government to attract and engage with international audiences been so important to its prosperity, security and international influence" (p. 30). In a globalised world, connectivity is key, and visibility indispensable. And what better means to achieve this than through the air? This potential of using national airlines and hubs by countries to project themselves internationally is not unprecedented: Singapore Airlines and Changi Airport have been particularly useful in this regard since the city-state's independence – with the iconic Singapore Girl as a global ambassador for the country's hospitality and cultural values. Along similar lines, albeit to a lesser extent, Malaysia Airlines is considered to have boosted Malaysia's regional reputation (Raguraman, 1997).

In the MENA region, this logic was perhaps best understood by Turkish President Erdogan, aspiring to an Ottoman empire-like role for Turkey through – inter alia – winning the hearts and minds of people abroad but also at home. As for the first, the last two decades marked a highly effective coupling of aviation sector growth with overseas diplomatic activity and international engagement. Turkey's rapprochement with Africa is quintessential: in 2003, Turkey had 12 embassies on the African continent while Turkish Airlines served five destinations; by 2019, these figures had increased to 41 and 52, respectively (Akca, 2019; Pitel, 2018). In a similar vein, Turkish Airlines' expansion and Turkey's visa liberalisation process have been two sides of the same coin: lifting visa requirements with various countries in the MENA region and beyond has been crucial in consolidating Turkey's aviation strategy – and, indeed, pursuing its soft power ambitions.

Such a policy was underlined in a 2013 address by Turkey's then deputy foreign minister: "We used our visa policy as a tool of *increasing soft power capability*, lifting visa requirements with more than 30 countries in the last five years. In addition to its political and cultural benefits, these agreements boosted our tourism" (Koru, 2013). What is more, Turkish Airlines' gradual move towards a transit passenger-oriented business model, and the hand-in-hand rise of Istanbul's mega airport designed according to a hub-and-spoke model, shows a rather remarkable resemblance to the direction Turkey has been heading into geopolitically. Taking some distance from Europe and the transatlantic network at large, while playing with rapprochement with Russia, and adopting a more assertive role in the Middle East, Turkey has increasingly positioned itself as a regional but also global power; as a central state at an important crossroads. More than before, it engages in a precarious balancing act with more powerful nations close by but also at a distance, seeking to assert its own geopolitical authority. Transporting passengers from all corners of the world in Turkish Airlines aircraft via the hypermodern Istanbul hub is indeed a symbolic yet powerful means to this geostrategic end. And if it cannot transport passengers, then it will fly surgical masks, disinfectant, goggles and facemasks to all corners of the world – 55 locations by the end of May 2020 to be precise – as part of Turkey's "coronavirus diplomacy" (Demirdas, 2020).

But Erdogan's ambitions for the aviation industry go beyond international engagement and relation-building. The ability to fly, perhaps more than any other sector, is closely associated with the aspirations of a rising middle class – or, a modern, prosperous nation. Quite exemplary, Erdogan's AKP party once promised that "every Turkish citizen will fly at least once in their life" (Pitel, 2018) – revealing that there is more at stake than just foreign policy. Through his focus on aviation, enabling more and more Turks to fly and making it not just a symbol but also a source of national pride, Erdogan has cleverly deployed this business to domestic political ends. With a flagging economy, a crackdown on Turkey's democratic institutions and a large influx of migrants, appeasing domestic audiences has not been self-evident but very crucial indeed. Thus, in Turkish Airlines President Erdogan found an effective soft power tool both in terms of domestic and international politics. Through its thriving aviation market, Turkey's global brand becomes that of a modern nation with a thriving middle class and a key connector at a strategic crossroads between Europe, Russia and the Middle East. In other words: one of globalisation's winners. Such ambitions do not come cheap, it must be said: the newly-opened Istanbul Airport cost nearly EUR 11 billion while 1.5 million trees were cut from the region's northern Bosphorus forest (McKernan, 2019).

Though a textbook case, Turkish Airlines is in no way unique in its yielding of soft power through the skies. Indeed, Gulf States were in fact the first amongst the "newcomer" aviation players to understand and act on the potential of their carriers to boost their

reputation and global brand. Dubai, Doha and Abu Dhabi's awe-inspiring development models have not gone unnoticed, and everyone who has flown with Emirates, Qatar Airways or Etihad – or merely looked at their advertisements – knows that this is also thanks to their aviation stars. Through their hypermodern and luxurious aircraft, unparalleled service, and worldwide network, Emirates, Qatar Airways and Etihad have done an impressive job in boosting the Gulf countries' global brands. Only due to Emirates' decision just a few years into business to serve alcohol in all classes and on all flights (except from those to and from Saudi Arabia) – cleverly copied by Qatar Airways and Etihad – and Gulf airlines' close association with the sports business, did the reputation of these conservative Arab states change drastically. The latter strategy deserves further comment: globally, Gulf carriers, but also Turkish Airlines, are amongst the largest sponsors of sports events, teams and stadiums. According to a 2018 study, Emirates had 54 active sports sponsorship deals worldwide, accounting for 22% of all airline deals, while Turkish Airlines was good for 16, Etihad for 11 and Qatar Airways for 7 (Ambrose, 2018). To name but a few examples, Arsenal FC fans call their home base Emirates Stadium or simply "Emirates"; Manchester City supporters refer to theirs as Etihad Stadium. Again, it is all about the brand, and associating with the highly emotional sports sector is an effective way to win the hearts and minds of the global public. The results of such branding are undeniable, and penetrate deep into geopolitical realities: Lebel (2019) rightly points out that Emirates' brand has served to promote the image of Dubai abroad, and as such contributed to the "deterritorialisation" of the Emirate from the region it lies in. Ask a person anywhere in the world what first comes to mind when thinking about Dubai and the answer will be wholeheartedly different from her or his perceptions of the Middle East, the Arabian peninsula, or the Gulf.

Domestically, the political importance of the aviation sector is also evident: thanks to acquiring a hub position, made possible by Emirates, Dubai has gained influence in the UAE's political landscape, especially vis-à-vis the much richer Abu Dhabi, whose royal family owns more than 80% of the oil and petrol in the country. At the same time, the launch of Etihad can be seen as a response to the success of Emirates: a family wishing not to be outshined by an important domestic rival, albeit in what is for Abu Dhabi a largely insignificant sector. Quite illustrative of this domestic rivalry was the proclamation of Etihad as the UAE's official company, despite Emirates' then two decades' old success. Political stakes to remain a separate business – despite rumours about a possible merger – have arguably been mostly political for the wealthy Emirate of Abu Dhabi, as airlines lend themselves as a useful tool in managing international relations. For instance, a rapprochement with Saudi Arabia following the intervention in Yemen since 2015 and the joint embargo against Qatar since June 2017 led to an increased

number of flights by Etihad to Riyadh but also Cairo. Most recently, Etihad carried out the first commercial flight between the UAE and Israel, delivering Covid-19 aid to Palestinians. Allegedly, this move follows from back-channel talks between the two countries over their mutual enmity toward Iran ("UAE's Etihad makes first known flight", 2020). By the same token, worsening regional relations have also been mirrored by developments in the airline's network: in December 2017 Etihad announced the suspension of all routes to Tehran (Lebel, 2019).

Rival Qatar is also quite a champion of soft power and the recent regional isolation has led the country to double down on these tactics (Paton, 2019). Unsurprisingly, in parallel to its efforts to strengthen diplomatic ties, Qatar Airways' network has been expanding. Since August 2017, free visa entry was granted to nationals from 80 countries while transit traffic was boosted. Less than a year later, in March 2018, Qatar's airline announced an increase in flights on a number of routes, and the opening of various new ones, many of which to Europe but also Turkey and Asia. But soft power efforts defined Qatar's strategy long before that. According to Ulrichsen (2014, p. 38), Qatar's brand seeks to position the Emirate "as a neutral and progressive leader within the Arab and Islamic world, and to garner the support of the wider Arab region in addition to the broader international community." Elements of such a strategy included (and are certainly not limited to) investing in research centres, museums, media (Al Jazeera), sports events – not least the acquisition of the 2022 FIFA World Cup – and, indeed, Qatar Airways (Cherkaoui, 2018).

Shifting our attention westward, another government's political projections align with its aspirations for the aviation sector, albeit with its distinct set of priorities and somewhat less spectacular results. At the dawn of the century, when RAM could no longer sustain its monopoly as Morocco's only carrier, the Moroccan government thoughtfully shifted its aviation strategy to a hub-oriented plan. Launched in 2002, this geopolitical vision acknowledged a worldwide trend towards "global transfer points" in the air transport business, with the future belonging to those cities that manage to integrate into this network (Vloeberghs, 2015). In less than two decades, Morocco's Casablanca hub but also RAM succeeded in becoming key players in Europe-Africa traffic. Aviation, indeed, became a symbol for the Kingdom's unique connection with Europe, and part of an effective branding strategy to position Morocco as a tourist destination. What is more, the Kingdom's flag carrier became an important tool in Morocco's Africa policy, and vice versa – showing a similar policy to that of Turkey and Turkish Airlines. Again, visa liberalisation and airline expansion appear to go hand in hand, with the latest addition being a direct RAM flight to Beijing following a visa exemption for Chinese nationals visiting Morocco. Despite undeniable success, the North African country's aviation

ambitions have not been unchallenged. Regional instability has put significant pressure on passenger demand, harming the business. And where its Turkish counterpart benefits from a larger middle class and a prime hub location between prosperous Europe and the rapidly growing Chinese and Southeast Asian markets, in Morocco both its domestic middle class and its hinterland's – i.e. Africa – travel ambitions are more limited. On top of that, RAM faces fierce competition from its Gulf and Turkish competitors. One could conclude that, while political aspirations are present, the commercial reality leaves much to be desired.

In a similar vein, the building of large international traffic hubs – integral to each of the countries' aviation strategies – fall within a larger, Gulf-led but wider trend of state-pursued mega projects (Hertog, 2017). Such mega projects, varying from museums, universities, and international festivals, to carbon-free cities and, indeed, airports, are considered popular soft power tools aimed at displaying – predominantly Gulf – states' progressiveness to the world. Gigantic and ultramodern infrastructures are meant to reflect and symbolise states' (and rulers') outward-looking and forward-thinking mindsets, extending beyond the economic into the cultural, the scientific and the normative. These ambitious undertakings, in schwung since the early 2000s, cater to the needs and tastes of international audiences and domestic elites and exist largely in parallel to the domestic societies. The economic impetus for such projects is not always clear and often largely absent: indeed, the political goals are deemed all the more important. Add to such soft power ambitions ruling families' soft spot for glitzy architectures and the results are ever larger and more cutting-edge airport infrastructures.

Taking Stock: The Political Implications

Thus, looking beyond – but not disregarding – the strategic advantages the MENA region is pleasantly endowed with when it comes to aviation, a dynamic, multi-layered picture emerges in which economic but more so (geo)political motivations coincide if not overshadow the commercial ones. Governments in the Gulf and Turkey – and to a lesser extent Morocco – have been quick to acknowledge the enormous soft power potential of thriving aviation sectors, marked by their flag carriers' extensive networks but also international traffic hubs. The stakes are both domestic and international, the implications equally national, regional and global. Through their airlines, states have promoted their brands far beyond the national or even regional borders, positioning themselves at the forefront of modernity, or as winners of globalisation. The resultant "deterritorialisation" – happening in the UAE and Qatar more than anywhere else – is indeed very much

welcome in a region that makes the headlines with stories of conflict, rivalries and radicalism. Asked about the Middle East, one thinks of refugee camps, terrorist attacks and state oppression; imagining Dubai, Doha or Abu Dhabi, luxurious shopping malls, cutting-edge technology and modern infrastructures come to mind – to put it bluntly. Of course, more than anything else the Gulf States have their oil rents to be thankful for, but the role of aviation in building their global brands cannot be overestimated. As for Istanbul, albeit at a different pace and scale, the new hypermodern airport cannot but boost Turkey's image to those millions of transit passengers passing through each years. Moreover, here the hub model helps Erdogan perform a precarious balancing act between some of the world's largest global powers and bring some of his ambitious foreign policy goals closer. As for Morocco, aviation signifies more than anything its unique relationship with Europe and revised Africa foreign policy. Then, the airlines and hubs reflect and sometimes intensify regional tensions, with business strategies developed as much in imitation of as in competition with one another. Not to mention the way in which their networks mirror (and sometimes even signal) the political agenda of the state they are aligned to: just think of the development of Qatar Airways' reach following the blockage – shrinking in the region but growing elsewhere. Lastly, the domestic component should also be acknowledged. Especially in Turkey and to a lesser extent Morocco, aviation – indeed a symbol for the aspirations of the middle class – has proven useful in appeasing domestic audiences and spurring national pride. In the UAE, domestic gains lie elsewhere: through Emirates and more so the Dubai Hub, the Al Maktoum family gained leverage vis-à-vis the much wealthier Al Nahyan family ruling Abu Dhabi. Etihad was born, one could say, out of pride more than anything else.

This use of airlines and airports for political ends has various implications, at multiple levels. Domestically, the thriving of the aviation sector is more than ever implicated with a state's robustness, or even survival. This is the case for some more than others: indeed, Abu Dhabi and Qatar are for the time being sufficiently backed by their oil and gas rents, although this will not continue forever, and the collapse in oil prices in the first half of 2020 does not help. For Dubai, political leverage in the UAE is very much dependent on the thriving of Dubai as a hub, and one could imagine that a slump in Emirates' business could easily deal a blow to the Emirate at large. While it is too early to tell, the impact of the Covid-19 crisis will likely be large. The stakes for Erdogan in Turkey may be highest, though: having successfully turned Turkish Airlines into a source of national pride and symbol of the rising middle class, its decline or even a temporary setback could have ramifications for the national spirit and the economy at large, which then in turn could affect the government's grip on power. Indeed, stakes are high. In Morocco, one could follow a similar logic, but its aviation market's smaller size naturally lowers the price.

Recent years have shown that the industry is not free from regional quarrels. Where soft power can be effective in forging closer ties, it can also be deployed for opposite ends. Etihad's suspension of flights to Tehran is but one example. Still, pursuing political grievances or rivalries through halting flight connections is still preferred to settling them through proxy wars.

On a more positive note, the hand-in-hand expansion of airlines and hubs in the UAE and Qatar also means the creation of some havens of stability, which is not unpleasant given their geographical locations – squeezed between arch rivals Iran and Saudi Arabia. The aviation business has given other countries a stake in the UAE's stability beyond oil and gas sources – which might come in handy someday, not least when the world moves away from its carbohydrates dependency. Nevertheless, it should be said that some regional quarrels aside, Gulf airlines and hubs' businesses have proven remarkably resilient to regional tensions. For Turkey and Morocco, this has been less the case: think of the post-Arab Spring slump for RAM or the effects of the terrorist attacks and coup on Istanbul's hub and Turkish Airlines. With consumer choices very much emotion-driven, and aviation having become strongly implicated in the "brand" that is Turkey, this industry has become more than others vulnerable to upheaval: following attacks, people will not stop buying Turkey-produced shirts but will associate Turkish Airlines with terrorism, and thus not only avoid the country's hubs but the airline too. And again, being important politically, the repercussions of a lull in the aviation sector likely goes beyond the economic. Finally, at the global level, the successful branding strategies of their hubs and the consequent "deterritorialisation" have driven important power shifts in both cultural and political domains. Football is but one sector in which MENA states have gained prominence, and the consequences are as much political as cultural. Having one's aviation strategy very much aligned with a country's foreign policy ambitions, the stakes in the thriving of the business automatically rise.

Interestingly, the UAE, Qatar, Turkey and Morocco – whose aviation markets have been the focus of this chapter – seemingly fall within two categories: either aspiring or emerging regional powers (the UAE and Qatar), or countries that have reconceptualised their foreign policy (with Morocco's Africa policy and Turkey's attempt to consolidate itself as a central state). The region's other (traditional) regional or subregional powers have lagged behind, for different reasons. With Iran crippled under sanctions and Egypt and Algeria more receding than aspirational powers, most puzzling perhaps is the case of Saudia, which, despite repeated announcements by the government to make aviation an integral part of its economic diversification strategy, and praiseworthy growth in the years 2013-2018, is nowhere close to following in the footsteps of its counterparts in

neighbouring countries. Saudia's international traffic continues to be dominated by inbound religiously-motivated traffic and labour, and it is hard to imagine the new King Abdulaziz International Airport as a vibrant transit hub posing serious competition to Dubai International Airport.

At Last: Europe's Dilemma

If aviation is indeed such an effective soft power tool, as this chapter has argued, the power shift in the global aviation market is likely to have political consequences for the "old guard" players that have been surpassed – to some extent at least – by the MENA region's "big four". Europe, indeed, comes to mind. On this continent aviation has also been historically associated with countries' international ambitions, technological advancement, and thus, global brand. Being challenged by rivals from the MENA region, thanks to the latter's excellent strategic location and other competitive advantages, Europe's key aviation players Germany, France, the United Kingdom (UK) and the Netherlands have, to some degree, seen the availability of an effective soft power decrease. European countries' eagerness to win back – they call it "maintain" – their leadership position shows that more is at stake than just the economy. To turn the tide for Europe's aviation market, dealing with the continent's capacity constraints is a number one priority (Hololei, 2019; Eurocontrol, 2018a), but both environmental and social constraints continue to pose barriers. Meanwhile, in 2015 the EU adopted a new aviation strategy, aimed to increase its competitiveness and connectivity, underlining the need for fair competition. The first major step has been the replacement of the never-used Regulation (EC) 868/2004 by Regulation (EU) 2019/712, granting the European Commission (EC) investigative powers following complaints by EU member states, airlines or air carrier associations, or on its own initiative, as well as the power to impose redressive measures if deemed appropriate (Bär-Bouyssière, Colgan, & Assahraoui, 2019; Fioretti, 2017). This emphasis on fair competition and a level playing field have led some to warn for an increasingly protectionist turn and move away from Europe's position at the forefront of market liberalisation in international air transport – a trend that could be reinforced once the UK, one of the more liberal-minded players, leaves the EU (Abate & Christidis, 2017). Yet, thanks to Covid-19, MENA airlines likely have much less to worry about potential claims regarding unfair competition – taking into account the government response packages generously bestowed on European flag carriers.

The economic rationale for a revised EU aviation strategy is rather obvious: according to the most recent estimations, by 2040 Europe's capacity gap will be 1.5 million flights,

while 16 airports are expected to reach Heathrow's current level of congestion. Without tackling such constraints, Europe could potentially lose around 800,000 jobs and EUR 50 billion in annual GDP by 2035 (Hololei, 2019). Yet, a closer examination of the MENA aviation market, as this chapter has sought to offer, suggests that for Europe, too, the story may be more complicated than that. Perhaps more than anything, the power shift in aviation symbolises a wider erosion of Europe's brand and leverage as economic, cultural and political standard-bearer, setting an example for the rest of the world. Recent emphasis on the term connectivity – while some say it is merely a code word for economic concerns for key hubs Schiphol, Charles-de-Gaulle and Frankfurt – very much ties into the narrative of globalisation.

Looking beyond the current Covid-19 crisis, pressure from MENA airlines and airports is unlikely to abate, and other markets will also be on the rise. The growing middle class in China and Southeast Asia, soon again to embark on planes with Europe as a key destination, bears enormous growth potential to the big four and other MENA carriers. Asian aviation markets are bound to expand as well, with Chinese airlines expected to follow growth trajectories similar to those of their Gulf counterparts – targeting the European market (Eurocontrol, 2018b). The current pandemic will delay such developments but likely not halt them altogether. As such, regulators and policy-makers are confronted with some highly complex dilemmas, not least finding the balance between re-launching the aviation business and tackling limits to growth in European skies while continuing its commitments to mitigating the effects of climate change, safeguarding high social standards, and open skies. Caution is advised: if Europe makes sacrifices on these latter fronts, bearing in mind the soft power element of aviation, it could move into a direction that is in fact very much at odds with its priorities, which would further reduce its geopolitical leverage and power.

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The Geopolitics of Virtual Spaces in the MENA Region: How Virtual Spaces Have become the Latest Arena for Competition and Conflicts in the Middle East

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With the digitalisation of industries, geopolitics becomes increasingly detached from its original geographical framing. As cyber threats and physical threats become indivisible, "cyber geopolitics" is likely to be at the forefront of future geopolitical competition.

This chapter aims to provide a brief and comprehensive introduction to the issue of cyber warfare and to set out the recent developments in this area. Geographically, it focuses on the Middle East region, since the vast majority of the most important recent cyber attacks appeared just there or were connected and it has the most advanced infrastructure in the Middle East and North Africa (MENA) region, North Africa being a very minor player.

The first part of the chapter will focus on the analysis of infrastructures in the region, the big players and the emerging powers. The second part will try to define the key notion of cyber warfare, comparing it to the standard warfare and presenting different types of cyber weapons that are known today, with a particular focus on information warfare and hacking. Finally, the chapter will analyse the hacking scandal between beIN sport and beoutQ, as an example of how regional conflicts can develop into cyber and virtual spaces.

Evolution of Digital and Virtual Infrastructures in the MENA Region

In order to understand the power dynamics of the virtual geopolitics in the MENA region, we must first provide a holistic overview of the forces involved, and how they may be balanced, focusing on two aspects: the basic layer of telecommunications and digital technology, i.e., marine cables, and the latest and hottest technological battlefield: Artificial Intelligence (AI).

Marine Cables

A submarine communications cable is a cable laid on the seabed between land-based stations to carry telecommunications signals across stretches of ocean and sea. The global tidal wave of deregulation swept the MENA region as much as it did other markets but, when it came to the international submarine cables market, this wave was halted by national regulations. The ability to build or co-build submarine cables in a market remained largely tightly controlled and in the hands of the national incumbent(s) in each market.

The will to control the cable infrastructure had two main explanations: monopolistic considerations in countries with a strong centralised economy, resulting in the support of the national government-owned telecommunications companies, and national security considerations, i.e. preventing foreign and/or private entities from controlling critical

infrastructure and ensuring compliance with security policies. Often, it was both reasons, resulting in situations where the line between the "Operator Strategy" and the "National Strategy" was non-existent.

In other words, the moves by key players in this battle were in reality reflective of national agendas. National companies benefited greatly from these restrictions, even if this may have had a negative impact on the competitiveness of each national market: what was financially good for the national company, i.e. being the sole market player able to engage in this infrastructure services market was actually not so good strategically for the country.

On a national level, every country was coveting the much sought-after status of being a so-called "Regional Hub", which is the promise to be to the telecoms industry what Frankfurt or Dubai is to the air travel industry. Those MENA countries that harboured those regional hub ambitions wanted to put themselves on the global map by facilitating as many cable interconnections as possible, and so offering global/regional telecommunications traffic switching from one network to another. With the advent and explosive growth of the Internet, there was an emerging gap in the market that needed to be filled; that of a common hub location, and intense competition emerged around this coveted position. It is worth noting that the bigger the national or local market, the less incentive that country and the telecommunications companies within it had to overtly engage in the MENA regional competition. And even when those market players participated in the regional battles, they did so passively and reactively rather than wilfully or proactively. On the contrary, the smaller the home market, the more ambitious and aggressive their plans were in pursuit of the regional MENA hub.

The plan for first the privately-owned cable in the MENA region came together in 1996. Interestingly enough, it was not owned by a group of telecommunications companies, as is usually the case, but by a group of private investors who pledged the capital needed to build this global network between Japan and the United Kingdom (UK), passing through the MENA region: United Arab Emirates (UAB), Kingdom of Saudi Arabia, Jordan and Egypt (Gelvanovska, Rogy & Rossotto, 2014). By the mid-2000s, and with the emergence of broadband technologies (3G on the mobile side and ADSL/VDSL on the fixed side), as well as the boom in some key economic sectors (retail, tourism, aviation, logistics), the stage was set for the race to build more global and regional cables to tap into that lucrative opportunity. The traditional landing sites were complemented with new sites along the Gulf, Red Sea and Mediterranean coasts, in an attempt to offer diversity and fully utilise some countries' location advantages. However, the prevailing logic inside most organisations when

justifying investments was still almost purely based on actual demand and forecasts of local market traffic.

There are a number of strategic factors that help establish a regional capacity traffic hub at a given location. First of all, the geographic location: it can be a real source of competitive advantage but it does not guarantee a winning position. In other words, a premium location can enable a premium regional hub but not every premium regional hub has a premium location. This is the case of Lebanon for example, which has a great geographic location but is a tiny player in the region. Political stability is another factor: during the "Arab Spring" events of 2011-13, Egypt lost its appeal entirely to global carriers/Internet providers, even though it arguably had – and still has – the best possible location. Geopolitical tensions in the Gulf over the past two years have also altered a few business plans. Finally, a transparent regulatory environment is the best tool to attract global operators and technology investors to a particular hub. This covers both telecom regulations and general business and foreign investment regulations. Some countries like Lebanon, and to a lesser extent Egypt, have lacked this stable environment and clear rules and have therefore not been able to play a regional role.

Artificial Intelligence

AI is a collective term for computer systems that can sense their environment, think, learn, and take action in response to what they are sensing and their objectives. Forms of AI in use today include digital assistants, chatbots and machine learning, amongst others.

A source of both huge excitement and apprehension, AI has considerable potential economic and geopolitical impacts in the Middle East. The region's leaders have learned lessons from the past: the failure to adopt the printing press in the 16th century set back economic development in the Middle East for at least two centuries. Now, the Middle East is expected to accrue 2% of the total global benefits of AI in 2030, which is equivalent to US$320 billion (PwC, 2018). Spending on AI-related technologies in the Middle East and Africa (MEA) region is expected to grow by 43% in 2019, to more than $374 million, with South Africa (20.5%), the UAE (19.7%) and Saudi Arabia (15.7%) accounting for the bulk of investments, according to the International Data Corporation (IDC) ("UAE Minister Draws on the Past", 2019).

In absolute terms, the largest gains are expected to accrue to Saudi Arabia, where AI is expected to contribute over US$135.2 billion to the economy in 2030, equivalent to 12.4% of GDP. In relative terms the UAE is expected to see the largest impact of close to 14% of 2030 GDP (PwC, 2018).

Parts of the region have already embraced AI and the new digital age. Analysis conducted by the IDC estimates that spending on cognitive and AI systems in the MEA region will reach over $100 million by 2021 (PwC, 2018). The UAE, Saudi Arabia and Qatar, in particular, have shown strong commitment towards the development and implementation of AI technologies. Outside the Gulf economies, however, adoption has been slower. The differences in adoption levels are driven by differences in, for example, infrastructure and access to skilled labour, key enabling factors for AI development. Governments have been trying to diversify sources of revenue and growth due to volatile oil and gas markets. Investments in AI technologies provide economic growth opportunities at present as well as a strategic stronghold for the years to come.

In October 2017, probably in a public relations stunt to promote itself as a place to develop AI, Saudi Arabia became the first country to grant citizenship to a robot. But when it comes to AI, Saudi Arabia means business. A month later, in November 2017, Saudi Arabia's Crown Prince Mohammed bin Salman pledged $500 billion to build a new, hi-tech city called Neom on the Kingdom's Red Sea coast, as part of a huge national push to diversify its economy. "Everything will have a link with artificial intelligence, with the internet of things – everything," the Crown Prince told Bloomberg (Nereim & Shahine, 2017).

But other countries in the region are making strides in this area. The UAE, which plans to have robot cops and autonomous vehicles on its roads and in its skies sooner rather than later, appointed a Minister of State for AI.: Omar bin Sultan Al Olama. "In 10 years we will be the capital of AI in service and government. I also think we will be a hub for Artificial Intelligence in the region," said Al Olama (D'Cunha, 2018). He laid out his country's approach to AI, stating, "we do not believe that we need to wait and be followers in the AI revolution. We need to take the lead" ("UAE Minister Draws on the Past", 2019). Working with United States (US) companies, the Emirati Ministry of Artificial Intelligence established an Artificial Intelligence Camp for Emirati students to attend during holidays. They expected 1,000 students for the first camp, but more than 6,500 showed up, 60% of them young women and girls ("UAE Minister Draws on the Past", 2019).

Other significant, non-Arab, players in the region are Israel and Iran. Israel has a dynamic AI ecosystem that grew from 512 companies in 2014 to 1,150 by the end of 2018, a 120% increase in four years (Mizroch, 2019). AI-related companies accounted for 17% of the total number of 6,673 active Israeli tech companies. The total capital raised by AI companies in 2018 ($2.25B) more than tripled from the amount raised in 2014 ($516M),

a peak year in terms of capital raised by Israeli AI companies (Mizroch, 2019). AI is a strategic technology for the Israel Defense Forces (IDF). Working groups of soldiers, researchers and high-tech employees collaborate on projects such as Stargate, which is focused on using AI to interpret aerial photographs, and Startrek, focused on non-aerial images. The military has another six such programmes working on similar intelligence projects, and hopes ultimately to have 10 in the works (Cohen, 2019). The goal of all these is to produce intelligence for military operations, boosting the army's capacity to understand what to do with the considerable amount of intelligence data being collected and how to draw conclusions from it. The IDF used to develop such systems exclusively internally or buy them from external vendors. Both processes were deemed too slow and complicated by the military. Development within the IDF was faster, but the military did not always have the necessary manpower. The current method seems to bring the best of both worlds: the manpower it needs, with experience developed at civilian companies and in academia, alongside the ability to feed the system actual data from the field, while improving the algorithm with the assistance of actual intelligence officers (Cohen, 2019).

The last major AI player in the region is also Israel's biggest enemy in the region: Iran. The US re-imposed sanctions may have severely damaged the Iranian economy but one sector is still thriving: emerging technologies. There have been talks about establishing a Ministry of Artificial Intelligence, like the UAE, but also projects to build a Robotic Army (Pargoo, 2019). Since 2010, Iran has constantly ranked in the top 20 in global AI research power, according to SCImago Journal Rank.[1] Iran's Islamic Azad University is ranked the fifth most productive institution in AI research in the world, with 104 total articles, behind the Chinese Academy of Science, MIT, Hong Kong Polytech University, and Singapore's Nanyang Technological University (Pargoo, 2019). Iran has another advantage in AI research: it is the fifth biggest producer of STEM (science, technology, engineering, and mathematics) graduates with 335,000 per year, after China, India, the US, and Russia. Most of these graduates are engineers who can contribute to AI research. In 2018, more than 70 state and private universities in Iran offered majors in AI and robotics (Pargoo, 2019).

Despite all these promising advances, Iran is still a small player in the AI field, mainly because research in this field requires investments that are beyond the reach and capabilities of Iran's economy, especially in a time of sanctions. Furthermore, Iran lacks a national strategy for AI. Even if the Research Center of Iran's parliament has published several reports about AI, and the Ministry of Information and Communications Technology has started working on a National Digital Transformation Project, there is still no comprehensive AI strategy like the one devised in the US, China, Russia or France.

1 See the ranking at the following link: https://www.scimagojr.com/countryrank.php?category=1702&region=Middle%20East

Weaponising Cyberspace: The Historical Big Players

Israel has the most significant cyber capabilities in the MENA region, on eye level with the world's first-tier cyber powers, the US, Russia and China. In 2012, the Israeli government established a National Cyber Bureau and later, in 2015, the National Cyber Authority as a coordination body with a budget of $500 million to complement its policy-making powers. Israel's Unit 8200, responsible for cyber operations, is the largest unit in the IDF (Kausch, 2017).

Israeli Prime Minister Benjamin Netanyahu has adopted cyber security as a personal priority, and the aforementioned cyber bodies are institutionally linked to the prime minister's office. As early as 2011, Netanyahu publicly vowed to turn Israel into a "world cyber power." By early 2016, Israel had over 300 cyber security companies, exports of $6 billion, and 20% of the world's private investment in the cyber domain.

For over a decade Israel has been strengthening links with Arab Gulf states with which it has no diplomatic relations. Geopolitical and generational changes have made their mark among Gulf elites but mostly, it is the rivalry with Iran. Saudi Arabia uses cyber technology from NSO, an Israeli company.

The origin of Iran cyber capacities lies in patriotic hacktivist groups in 2000 who conducted attacks against networks of foreign organisations and governments deemed hostile to the Islamic Republic. Some members of these groups have now regrouped in the "Iranian Cyber Army".

Iran's international cyber activity involves not only espionage and defensive mechanisms but increasingly targeted political disruption for geopolitical ends. These capacities were showcased in August 2012 when, possibly in retaliation for an unidentified virus discovered in the network of Iran's Oil Ministry four months earlier, an Iranian hacker group called Shamoon attacked Saudi Aramco, the world's biggest oil company and the base of Saudi wealth (Cherkaoui, 2018).

In 2013, the year following the Shamoon attack on Aramco, Saudi Arabia adopted its first National Information Security Strategy. In February 2017, Riyadh inaugurated its National Cyber Security Center at the Ministry of the Interior as a national technical coordination centre for cyber defence. The UAE established the Abu Dhabi-based National Electronic Security Authority in August 2012 and, in 2017, adopted a Dubai Cyber Security Strategy. Qatar's inter-ministerial cyber coordination body, the National Cyber Security Committee, established the country's National Cyber Security Strategy in 2013 (Kausch, 2017).

Typology of Cyber Conflicts

Cyber attacks can be divided into two groups: breaches to gather information (digital espionage), and attacks on foreign systems to block or damage adversaries' networks, such as of governmental bodies, symbolic targets or critical infrastructure. While it is cheap and comparatively easy for hackers to break into a system, the development of an attack with real-world impact is much more complex and requires capacities that not many powers, let alone non-state actors, may possess.

Attribution, which is the ability to determine who is behind a cyber attack, is a tricky and complicated issue. Due to these difficulties, the cyber domain presents several challenges to traditional mechanisms of deterrence. In the Middle East, the cyber proliferation of actors with an extensive regional agenda presents a particular challenge.

Information is now the world's most consequential and contested geopolitical resource. The world's most profitable businesses have asserted for years that data is the "new oil." Political campaigns and foreign intelligence operatives have shown over the past two American presidential elections that data-driven social media is the key to public opinion. Leading scientists and technologists understand that good datasets, not just algorithms, will give them a competitive edge (Rosenbach & Mansted, 2019).

Information is more important to world affairs today than at any previous point in history as a result of recent advances in data-driven technologies. These advances have revolutionised each of the four key facets of information power: to influence the political and economic environment of other actors, to create economic growth and wealth, to enable a decision-making edge over competitors, and to communicate quickly and securely. The global penetration of the Internet has revolutionised the potential for information to influence other actors, not necessarily as propaganda but simply as soft power, or the ability to project one's own worldview to others. Data and information now play a central role in nations' ability to create the wealth and prosperity essential to developed economies.

The rising importance of information to world affairs is exacerbating old and creating new vectors for inter-state conflict. We have already seen that the economic and strategic importance of data is an incentive for states to sponsor cyber attacks and industrial espionage against rival countries' companies. Digital sabotage is also emerging as a new and expanding vector for interstate conflict. To this point, most state-sponsored cyber attacks have been for the purposes of stealing information or impairing the availability of communication or computing systems (Rosenbach & Mansted, 2019).

Some states can and do consider some cybercriminals as extensions of state power. The interest of the governments in using a cybercrime proxy is three-fold: firstly it is thought to provide a certain level of plausible deniability if discovered, secondly it provides instant access to a high-grade skills set and assets that could prove difficult and expensive to build up internally, and thirdly it weakens defenders by raising the "noise to signal" ratio – encouraging lots of low-grade cyber attacks to distract from the more serious state-executed operations (Klimburg, 2018).

A Cyber Arms Race in the Gulf?

In the conflict-ridden context of the Middle East, states use every means at their disposal to defend and protect their interests. Allowing a wide variety of actions, from sabotage, military operations, and information and communication raids, cyberspace is being considered as a predominant strategic tool (Nocetti, 2019). Not all players in the region have the same capabilities or perception of the strategic importance of the cyber arena. Whilst for some cyberspace is a national priority, for others, interest in this subject can be limited to internal use and not a geopolitical aspect.

States are the main players in cyberspace in the Middle East for the simple reason that mastery of this field requires not only technological know-how, suitable infrastructure and people with the necessary skills. The development of certain defensive and offensive capabilities also requires considerable funding, beyond the abilities of non-state groups. Cyber warfare has provided Middle Eastern states with espionage and offensive capabilities that were often otherwise unavailable to them in traditional, offline domains. The military and political strategies perfected in the region translated aptly into cyberspace. State and non-state actors that understood asymmetric warfare were the first to engage in cyber operations (Anderson & Sadjapour, 2018). Countries in the region have hacked each other, deployed malware as a tool of war, and interfered in each other's communications networks. Thanks to its asymmetrical nature, cyber warfare has the potential to shift the balance of power in the battlefield. Furthermore, in cyberspace, it is far cheaper, and therefore easier, to attack networks and infrastructure than to defend them properly; hence, countries in the Middle East will continue to invest in offensive capabilities that might provide a deterrent, rather than focus on the hard work of defence. Cyber capabilities have now become a must-have. Even if a state cannot defend itself against rivals, it can still hit back.

A basic hacking operation has been seen as one of the triggers of the 2017 Gulf crisis. On 19 April, a hacker gained access to the state-run Qatar News Agency (QNA), discovering vulnerability in the network's code, and entered it. This allowed him to gain

control over the entire network. On 23 May, statements attributed to the Qatari emir, Sheikh Tamim Bin Hamad al-Thani, on very sensitive issues such as Iran and Hamas, surfaced in the QNA. Although Qatari officials disowned these statements, reporting a hack of state media networks, Saudi and Emirati state-owned networks ignored the reports and pressed for a full-on condemnation of the statements.

Months later, pro-Qatar hackers retaliated by hacking Doha's critics and regional adversaries including the UAE's ambassador to Washington Yousef al Otaiba, whose leaked emails hinted at covert attempts to influence the US foreign policy. The Qatar crisis demonstrated how the pursuit of expansive geopolitical ambitions by means of targeted cyber attacks could generate conflict and trigger political landslides in no time at all.

Table 1. Publicly Known State-Sponsored Cyber Operations in the MENA Region 2010-17

Country	Sponsored	Victim of Attack
Iran	19	18
Israel	5	11
Saudi Arabia	0	16
UAE	1	6
Syria	0	8
Turkey	0	6
Qatar	0	4
Lebanon	0	4
Iraq	0	3
Bahrain	0	1
Jordan	0	4
Kuwait	0	3
Yemen	0	2
Morocco	0	2
Algeria	0	3
Tunisia	0	1
Egypt	0	4
Libya	0	2

Source: Council on Foreign Relations.

*Number of publicly known state-sponsored cyber activity in which the perpetrator is suspected to be affiliated with a nation-state in pursuit of its foreign policy. The figures exclude non-state actors such as hacktivists where no direct link to a government can be established.

The tensions and aggressions in and around cyberspace have convinced the Gulf states to invest in cyber security capabilities, institutions and strategies. They have also resorted to outsourcing some of their cyber operations to hackers. Cyber attacks also align with Tehran's expansive regional reach by means of proxy warfare. However, if controlling proxies is a challenge in physical warfare, exerting such control will be even harder for state sponsors in the cyber realm.

Cyber experts point out that in the range between constant low-level attacks and big cyber weapons, destructive attacks of the Shamoon kind are going to increase in frequency and destructive power as a growing number of states acquire offensive cyber capabilities. But even if there are no major, large-scale attacks, the continuation of the cyber arms race in the region could well lead to an increase in tensions within it and globally. Riyadh's sense of siege would reach new heights, building up to a showdown further down the road. One way or another, Iran's status as a growing power in cyberspace means that the political rivalries and long-standing tensions of the Gulf and the Middle East more generally are only poised to worsen.

The BeIN vs BeoutQ Case: A Diplomatic Crisis that Led to a Multimillion Hacking Scandal

Prior to the Arab uprisings, the leading pan-Arab satellite news channels, Al-Jazeera Arabic and Al-Arabiya, benefited from a relative lack of state control over their content when compared with terrestrial news channels. Like the majority of Arab news outlets, politically aligned individuals or elites fund both companies and while the channels avoided criticism of Qatari and Saudi politics respectively, they had leeway to address thorny regional political issues.

Following the Arab uprisings, both Doha and Riyadh adopted more aggressively interventionist foreign policies, and the channels became more obvious tools of those policies. Since June 2017, Al-Jazeera has been at the centre of a diplomatic crisis between Qatar and Saudi Arabia and its regional allies. Citing Qatar's regional sponsorship of terrorism, the Saudi-led bloc demanded that Qatar comply with 13 demands, including severing all ties to "terrorist" organisations and closing Al-Jazeera and its affiliate stations. Qatar's rejection of the ultimatum led to an ongoing regional diplomatic and trade blockade on it and bans on watching Al-Jazeera in Saudi Arabia, the UAE, Bahrain and Egypt. Iraq and Syria had already revoked the operating licences of Al-Jazeera.

Weaponising political agendas with digital tools can significantly spur geopolitical confrontations. Existing competition and tensions have now found a new space to develop and expand, with a potential for staggering escalation. The beIN / beoutQ crisis provides an example of how intense regional competition and conflicts could rapidly expand when cyber attacks are used. Indeed, their considerable disruptive potential, combined with rapid implementation at low economic cost make cyber tools a perfect fit for actors who pursue an expansive geopolitical strategy and seek to wreak havoc quickly and globally.

BeIN sport is the sports subsidiary of Al-Jazeera. It owns the right to pretty much every major sports tournament for the Middle East. BeIN snapped up the rights for Arabic-speaking broadcasts of the 2018 World Cup from FIFA and Grand Slam tennis matches from the International Tennis Federation. BeIN's full content was then hijacked and broadcast quasi-simultaneously on a pirate network called beoutQ. For more than a decade, Qatar, a tiny desert-state that controls a large share of the world's liquefied natural gas supply, has used sports to raise its profile and the culmination of those efforts was the FIFA decision to organise the 2022 World Cup in Qatar. In that vein, beIN has committed several billion dollars to secure exclusive rights to the biggest sports events, often paying far more than market value to ensure supremacy in the Arab world and beyond. The network has become a national emblem for the emirate (Panja, 2018).

BeoutQ started by streaming content through a website. However, within months of its launching last year, beoutQ had expanded to offer 10 different beIN channels via the ArabSAT satellite broadcasting network. Complete with set-top boxes, paid subscriptions, advertising and commercial deals with hotels and other venues, the operation has all the infrastructure of a corporate television network, without ever having paid a single penny for content. BeoutQ's website claims its backers are a Colombian and Cuban consortium. Officials at beIN said they had spent more than $200,000 investigating the bootlegging and traced the beoutQ signal to the Riyadh-based satellite provider Arabsat. Saudi Arabia is the company's largest investor (Panja, 2018).

"The scale and sophistication of this commercial theft – and the length of time over which it has occurred – is unprecedented," Tom Keaveny, managing director of beIN, told *The Independent.* "This piracy by beoutQ and Arabsat is not being carried out by a small outfit operating out of someone's bedroom. This is theft on a massive commercial scale with multi-million dollar funding underpinning it" (Cuthbertson, 2018). BeIN has demanded Arabsat remove the rogue channels but Arabsat through the US-based law firm Squire Patton Boggs refused. It said the customer who bought the satellite space

denied being involved in beoutQ. The beIN antipiracy team believes it knows how beoutQ is stealing the signal. Essentially, the website is re-airing content delivered to an individual subscriber. Since each subscriber has a unique identification number that is usually visible, known as a fingerprint, beIN engineers thought they would be able to easily identify the offending customer. However, the cyber pirates had figured out how to hide their fingerprints (Panja, 2018).

BeIN Media Group filed a complaint in France against Saudi-based Arabsat to try to establish, in what it said was a "credible" court, that Arabsat was carrying pirated broadcasts of global sports events to which beIN held the rights. A 13 June 2019 ruling by the Paris court found that signals from beoutQ were available on Arabsat frequencies and accessible from French territory (Ordonnance de Référé rendue le 13 juin 2019, Tribunal de Grande Instance de Paris). The court insisted that there was no "clear and illegal disruption or proof that there was immediate risk of commercial damage" justifying blocking beoutQ's satellite signals in France. Arabsat, which is owned by member states of the Arab League, has denied that beoutQ uses its satellite frequencies for illegal broadcasts. Arabsat welcomed the French ruling, saying it rejected "all false accusations that Qatar's beIN sports group tried to pin on Arabsat." Arabsat has a small presence in France, which enabled beIN to file its complaint in Paris. BeIN was ordered to pay fees of 25,000 euros (22,331 pounds) to Arabsat and 6,000 euros to an Arabsat adviser (Ordonnance de référé rendue le 13 juin 2019, Tribunal de Grande Instance de Paris).

For months, beIN had tried to persuade the main sporting organisations to publicly denounce beoutQ. As the crisis entered its second year, many – including FIFA, UEFA and Spain's La Liga – started to speak out, in some cases pointing fingers at Arabsat and Saudi Arabia. Several global sports bodies have threatened legal action against the pirate channel beoutQ over what they say are illegal broadcasts across the Middle East and North Africa. In a joint statement, FIFA, the AFC, UEFA, the Bundesliga, La Liga, the Premier League and Lega Serie A, the rights holders of various football competitions, collectively condemned in the strongest possible terms the ongoing theft of intellectual property by "beoutQ" and explicitly called on the authorities in Saudi Arabia (KSA) to end the widespread and flagrant breaches of their intellectual property rights taking place in the country (UEFA, 2019). Finally, in April 2020, beIN has asked the English Premier League to block the Saudi Arabia-backed takeover of Newcastle United football club because of the Kingdom's alleged involvement in the beoutQ piracy.

In order to build a strong case against beoutQ, whose operator is still officially unknown, most prominent football bodies, such as the Asian Football Confederation (AFC),

Deutsche Fußball Liga (DFL), Fédération Internationale de Football Association (FIFA), Football Association Premier League Limited (PL), Lega Nazionale Professionisti Serie A (Serie A), Liga Nacional de Futbol Profesional (LaLiga) and Union of European Football Association (UEFA), appointed MarkMonitor, a firm specialised in enterprise brand protection and which has provided live anti-piracy solutions for global sports rights holders and broadcasters, to conduct an independent technical investigation and analysis. MarkMonitor's investigation concluded that beoutQ pirate service is a highly technically sophisticated and organised operation, and that it is geographically targeted at the Middle East and in particular Saudi Arabia ("BeoutQ Investigation", 2019).

Conclusion

Cyberspace is a place where states assess their power and influence. Cyber attacks are therefore carried out within a geopolitical agenda. The major difficulty in cyberspace is the ability to determine and define sovereignty, in a space where there are no physical territories or boundaries. Each state has to establish where to administer its jurisdiction in cyberspace in order to exercise the applicable law and, eventually, attribute the attack to an organisation or a country. Territoriality is a key issue. Cyber infrastructure (servers, routers, cables, etc.) are located in a physical territory with physical frontiers governed by international laws and treaties. The interconnection of networks, which go through different territories quasi instantly, puts the territoriality question in a whole new frame, nearly a cognitive disorder. If territoriality is a major differential dynamic in cyberspace vis-à-vis geopolitical competition in physical spaces, attribution is the other main characteristic. Attributing a cyber attack is the ability to allocate it to a certain attacker or a group of attackers in a first step, then revealing the identity of the attacker in a second step. Attribution is a sign and affirmation of power in cyberspace. It is as if one country is saying "we know you did, and we can retaliate."

And this is what has happened with the beIN vs beoutQ case. The latter has stopped its operations via satellite and Internet. It is worth noting that the conflict has neither been resolved in courts, nor in classic diplomatic salons between nation-state envoys, ambassadors or ministers. Rather, it was sports bodies and more specifically the football federations, European or international, which successfully intervened. As virtual spaces go beyond the framework of states and their borders, diplomacy has also expanded and evolved into a more complex game. Rifts are not only resolved between nation-states but sometimes the authority of far mightier players, here UEFA and FIFA, for example, can be more persuasive. As Philippe Séguin, a former President on the French National

Assembly once put it, "if the UN had the same authority as FIFA, there wouldn't be a single conflict on earth" ("Philippe Seguin, «sauveur» du foot français", 2010).

This case is an eye-opener for any actor concerned with the risk of cyber warfare in the MENA region and its global implications. The European Union (EU) is one of them. The widespread sense of impunity is driving the EU and its member states to support regional and global efforts to ensure that the perpetrators of cyber attacks face the consequences and that their victims are adequately protected and compensated. The so-called Cyber Diplomacy Toolbox adopted by the EU in 2017 provided a significant boost to the Union's goal of becoming a "forward-looking cyber player". In addition to a number of diplomatic and operational measures, the toolbox proposed the use of sanctions as one of the instruments at the Union's disposal (Pawlak & Biersteke, 2019). Reaching an international consensus on what triggers a country's right to self-defence in cyberspace requires a coherent, common understanding on where to draw the line between nefarious economic or intelligence activities and true cyber attacks (Wheeler, 2018).

However, this could be a long-term effort, which will not bear fruit immediately. In the meantime, European actors can work on confining the effects or symptoms of this cyber confrontation. Naming and shaming is one way of doing it. In a recent report on the protection and enforcement of intellectual property rights in third countries, published on 8 January 2020, the European Commission (EC) singled out Saudi Arabia for "causing considerable harm to EU businesses" following the theft of European sports programmes by Saudi-based beoutQ and Arabsat. But this strategy is not enough. Using a more positive tone, the EU should also strongly encourage the MENA region countries to be part of the Budapest Convention on Cybercrime. Established by the Council of Europe in 2001, it is the only binding international instrument on cyber crime and serves as a guideline for any country developing comprehensive national legislation against cyber crime and as a framework for international cooperation between state parties to this treaty.[2]

2 As of March 2020, in the MENA region, only Morocco, Tunisia and Israel had joined the Budapest convention.

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EuroMeSCo

Founded in 1996 and comprising 102 institutes from 29 European and South Mediterranean countries, EuroMeSCo is the main network of research centres in the Mediterranean, striving at building a community of institutes and think tanks committed to strengthening Euro-Mediterranean relations.

The objectives of the network are to contribute to inclusive policy making and generate influential quality analysis and reflection on Euro-Mediterranean politics and policies, in particular in relation with economic development, security and migration issues; to serve as a platform for dialogue between the members of the network and key stakeholders to discuss the key trends and challenges on the region´s agenda.

The EuroMeSCo work plan includes a wide range of publications involving experts from both sides of the Mediterranean and including reactive and policy-oriented formats, as well as a number of activities including multi-stakeholders events and a specific scheme targeting young researchers.

IEMed.

The European Institute of the Mediterranean (IEMed), founded in 1989, is a consortium comprising the Catalan Government, the Spanish Ministry of Foreign Affairs and Cooperation and Barcelona City Council. It incorporates civil society through its Board of Trustees and its Advisory Council formed by Mediterranean universities, companies, organisations and personalities of renowned prestige.

In accordance with the principles of the Euro-Mediterra nean Partnership's Barcelona Process, and today with the objectives of the Union for the Mediterranean the aim of the IEMed is to foster actions and projects which contribute to mutual understanding, Exchange and cooperation between the different Mediterranean countries, societies and cultures as well as to promote the progressive construction of a space of peace and stability, shared prosperity and dialogue between cultures and civilisations in the Mediterranean.

Adopting a clear role as a think tank specialised in Mediterranean relations based on a multidisciplinary and networking approach, the IEMed encourages analysis, understanding and cooperation through the organisation of seminars, research projects, debates, conferences and publications, in addition to a broad cultural programme.

IAI Istituto Affari Internazionali

The Rome-based Istituto Affari Internazionali (IAI) is a private, independent non-profit think tank, founded in 1965 on the initiative of Altiero Spinelli. It seeks to promote awareness of international politics and contributes to the advancement of European integration and multilateral cooperation. IAI is part of a vast international network, and interact and cooperate with the government and its ministries, European and international institutions, universities, major national economic actors, the media and the most authoritative international think tanks.

CIDOB

CIDOB, the Barcelona Centre for International Affairs, is an independent and plural think tank based in Barcelona, dedicated to the study, research and analysis of international affairs. CIDOB is one of the founding members of EuroMeSCo and the Mediterranean and the Middle East is one of its main areas of expertise, together with European integration, migration, global cities and Latin America. It leads and takes part in several EU research projects. From 2016 to 2019 CIDOB coordinated the MENARA project, focusing on geopolitical shifts and its impact in the regional order in the Middle East and North Africa.