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Cyprus and Greece Natural Gas Perspectives, Production Costs and the European Security of Supply

Dr. Elias Konofagos^a and Konstantinos Karageorgis^b

^a*Executive Vice-President FLOW Energy S.A. Deputy Director www.FlowEnergy.gr*

^b*Rear Admiral Hellenic Navy, Hellenic Fleet Commander in Chief, koskar1962@yahoo.gr*

Abstract. The Eastern Mediterranean area is on its way to become an important energy province and without question it remains home to large hydrocarbon resources, even though the countries in the region, excluding Egypt, have been quite slow to locate and discover them. From a geopolitical point of view offshore Cyprus, Israel, Lebanon, Turkey and even Syria has in the past decade become part of a broader dynamic in the Eastern Mediterranean sea. This dynamic includes offshore oil and gas exploration, discoveries of giant natural gas fields and development of the necessary infrastructure for producing these fields. Supergiant gas finds are some of the fields that are now producing or are under development in the region.

After making a series of significant gas field discoveries like "Dalit", "Tamar", "Leviathan", "Aphrodite" and supergiant "Zohr", Cyprus, Egypt and Israel are now trying to figure out how to utilize them. One straight forward policy is to meet domestic energy demand, displace oil in the domestic energy mix, generate more electricity from gas and hence reduce reliance on imported oil and coal. Moreover, in some years or so, these countries will have the possibility of exporting surplus gas to markets where they can fetch better prices. By becoming exporters they will also be able to contribute to European gas supply security in terms of diversifying both routes and sources. However, the question of whether the discovered reserves can find their way to the domestic and international markets in a timely manner requires careful examination. Meeting domestic demand and creating surplus for exports necessitates the development of the discovered fields, i.e., converting reserves into production capacity. Companies will carry out costly exploration and field development endeavors only if they foresee the ability to commercialize their discoveries with a favorable rate of return. In this sense, much will depend on the security of the region, the stability of the countries and the political atmosphere, on the natural gas accumulations total production cost, on the gas price the governments will be asking for on the domestic market and on the countries regulatory, fiscal and gas policies.

Based on the above considerations our work has particularly focused on the forthcoming gas fields' discovery perspectives in Cyprus and Greece, on the contractual terms needed from oil and gas companies, on the level of gas production costs and the importance of synergies on attracting regionally oil companies' investments through licensing rounds.

Keywords: Hydrocarbon, East Mediterranean, security, Economic Exclusive Zone.

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INTRODUCTION

A wide ranging debate related to Cyprus and Greece's possible offshore natural gas resources has been conducted over the last four to five years among petroleum geologists, engineers and energy economists. As it was expected the ongoing debate has raised important regional

economic expectations among politicians and the public. From a geological point of view recent natural gas discoveries realized offshore, Cyprus, Egypt and Israel have shown us that a great part of the East Mediterranean offshore area, located in a region between north, west and south of the island of Crete, south of Cyprus, Israel, Egypt and offshore Lebanon, was for several tenths of million years part of the “Tethys Sea”. “Tethys Sea” originally was the place where the giant oil and gas fields of Saudi Arabia, Iran, Iraq, Syria and the East Mediterranean ones were created (Fig.1). Recent East Mediterranean studies based on gas field discoveries like “Dalit”, “Tamar”, “Leviathan” and “Zohr” analysis showed us that important geological analogies are present regionally, which in the future could lead to further natural gas development opportunities located into the Cyprus Exclusive Economic Zone (EEZ) and into the south Crete Greek Continental Shelf.

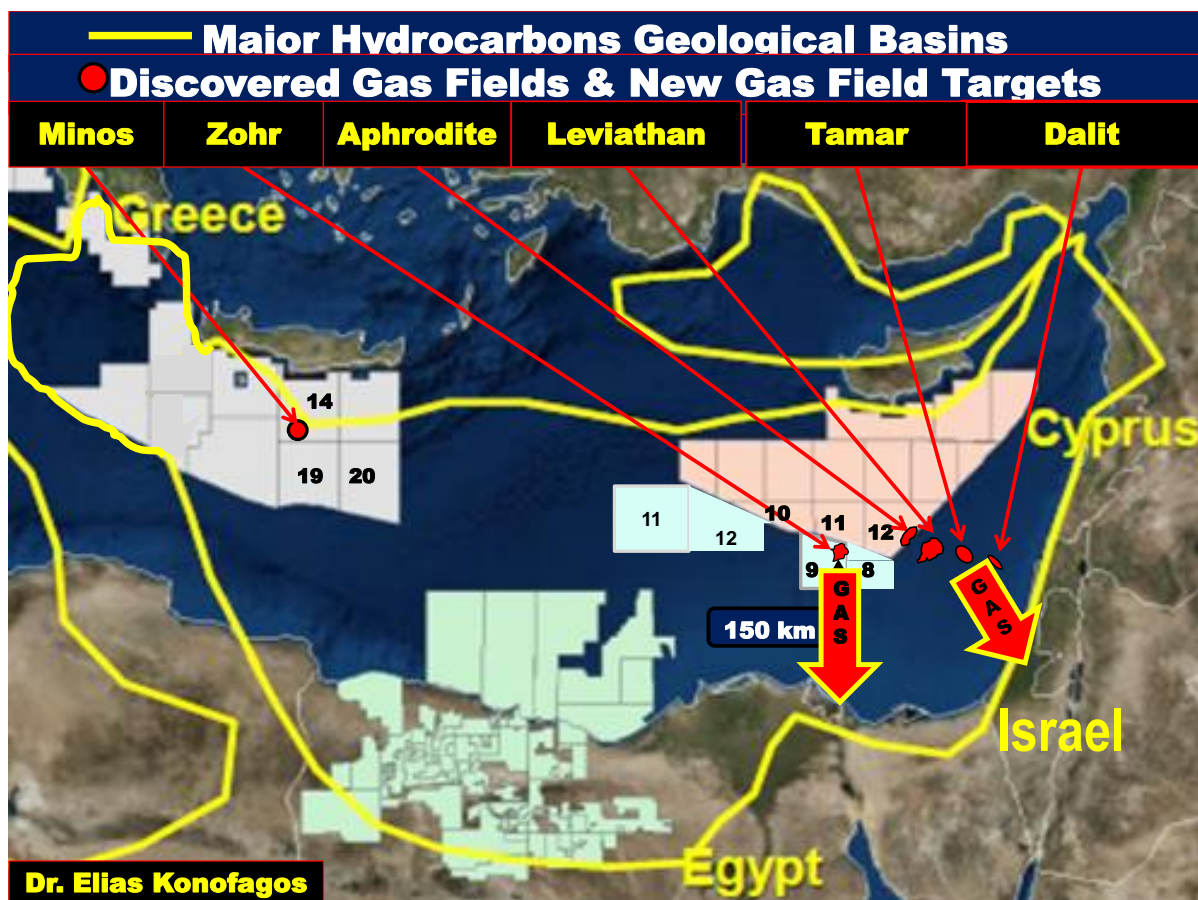


FIGURE 1. Major Hydrocarbons Geological Basins in Eastern Mediterranean.

Creation of new development opportunities offshore Cyprus, Egypt and Greece will need to attract oil companies for exploration and production offshore contractual investments. Taking into account the current geopolitical situation in the region (Syrian civil war, refugee crisis, presence of the Islamic State, Turkish military Coup, etc) and the recent collapse of the International gas prices, the oil companies will invest only if important technical, economic, legal and security contractual incentives can be implemented and offered to them by the host countries.

Our work will focus briefly on the current regional geopolitical situation in the East Mediterranean and will analyze the case by case relevant production costs faced regionally by the

oil companies and the necessary contractual terms needed in order to satisfy both the oil companies and the host countries in question.

THE ACTUAL GEOPOLITICAL SITUATION IN THE EAST MEDITERRANEAN

Since 2010 new geopolitical developments have caused a shift in old traditional regional interests, behavior patterns, and alliances between the Eastern Mediterranean's primary actors, Cyprus, Egypt, Greece, Israel, Syria and Turkey and have determined their actions. The change began with the sudden collapse in Israeli - Turkish relations [after the 2010 Mavi Marmara incident](#) and the collapse of Egyptian - Turkish relations, following the 2013 military revolution against the Islamic regime imposed by the Muslim Brotherhood after President Mubarak's resignation in February 2011. These events were added to the deteriorated situation in Syria and the historically troubled relationships between Cyprus, Greece and Turkey over the Turkish occupation of the northern part of the Cyprus Republic and the unfounded Turkish claims on the Aegean Sea and the Greek islands. The already tense relations became more complicated with the discovery of hydrocarbons deposits in the region in 2009-10.

After the dramatic political events that took place mainly in Syria and Turkey in 2015 and 2016 that have turned Eastern Mediterranean into one of the key areas for global security, the situation in the region is evolving around the following key aspects:

- The refugee crisis due to chaotic conditions in Syria.
- The growing influence of ISIS and the struggle against the totalitarian Islamism in its various forms.
- The consequences and President Recep Tayyip Erdogan's reaction to the failed military coup in Turkey.
- The developments and the prospect for cooperation in the field of energy.

The Refugee Crisis

The sudden and massive flow of population due to the chaotic conditions in Syria during the last years had a substantial impact on the security, the economy and on the domestic politics of the countries in the area, but mainly affected Greece and Turkey. It has generated new tensions, and intensified pre-existing ones, not only between the two countries, but also between Turkey and EU, and influenced the Union as a whole. This impact will be magnified as the crisis continues and its scale increases. On September 2015, the UN announced that in Syria, from a pre-war population of 22 million people, 7 million had been displaced, with more than 4 million seeking safety outside the country. Of those 2.1 million Syrians were registered by UNHCR in Egypt, Iraq, Jordan and Lebanon, and 1.9 million Syrians were registered by the Turkish government¹.

The immediate challenge is to manage the refugee flows arriving from Turkey to Greece crossing the Aegean Sea. Only in 2015 more than 850.000 refugees transited Greece on their way to central Europe. The refugee flow peaked up at a time when both Greece and Turkey were already facing a set of serious challenges; economic problems and the persistent low economic growth of Greece along the territorial disputes between the two countries due to Turkey's claims in Aegean and in Cyprus. The growing uncertainties concerning Turkey's relationship with the EU, the recent military coup against President Erdogan and his reactions to it, the Kurdish problem

¹ "The Eastern Mediterranean in 2020: Possible Scenarios and Policy Recommendations" ELIAMEP Policy Paper, April 2016.

within the country and at its southern borders with Syria and on the east with Iraq and the constant and pervasive threat from ISIS.

The refugee crisis represents to both countries primary a humanitarian concern, due to the reception, management and hosting problems, which such a huge number of people create. It is also an important security question, due to the difficulties involved in tracking so many people and the actual danger of terrorist members being able to infiltrate the refugee flows. The influx of immigrants has also revealed old, seemingly forgotten, radical social tensions: Xenophobia feelings, the sense of sovereignty loss and the consequent need to impose tight border control, anti Islamic feelings and rise of extreme right wing political parties. All these phenomena add significant tension to the already strained relationships among the countries of the area and undermine every reasonable and staid voice, already weakened by the economic crisis. The problem is not an easy one to solve and exceeds the Eastern Mediterranean limits¹. Cooperation and economic growth that derive from the exploitation of the energy resources could have a significant impact towards a more effective management of it.

The situation in Syria remains a most pressing regional challenge. It influences all regional actors, touching simultaneously humanitarian, refugee, sovereignty, security, balance of power and regional disputes issues. It would be extremely difficult to reach a diplomatic solution without the engagement of all the neighboring countries, but also the EU, Russia and the U.S.A. Cyprus and Greece, both members of the EU, countries with longstanding close and good relations with Syria and traditionally valued and respected by the Syrian people have the rightful obligation to actively become involved and work for a solution. "Time is a critical factor as an agreement must be reached before the conflict in Syria, and especially ISIS, further "contaminate" neighboring countries and continues to send waves of refugees to Europe."²

Totalitarian Islamism - ISIS

Parallel to the eruptive situation in Syria, totalitarian Islamism and the persisting influence of the so-called Islamic State are two additional significant factors that influence the traditional behavior of all actors, not only regional, in the Eastern Mediterranean area. The ISIS organization has initially surprised the world community with its aggressiveness and effectiveness. It gained the control of key cities in Syria and Iraq such as Raqqa, Ramadi and Mosul and in many occasions acted as a sovereign state with its own distinctive administrative institutions, from education to health and from justice to legislation, drawing on significant financial resources and a growing infrastructure. After their initial embarrassment and period of inaction the western powers managed to gradually restrict ISIS sources of income and financial resources and succeeded in delivering significant strikes to its military flank³. Currently ISIS is on the retreat; Mosul will soon be liberated and the organization will probably be militarily defeated and politically marginalized⁴.

¹ "The number of immigrants is increasing as a result of various conflicts and, in the near future, climate change. However much one tries to de-securitize the migration question, relations between Europe and the Middle East and the West and Islam will also affect domestic stability in those European countries with a substantial Muslim community." "The Eastern Mediterranean in 2020: Possible Scenarios and Policy Recommendations" ELIAMEP Policy Paper, April 2016.

² Dr. Dokos Thanos Director ELIAMEP. "The Eastern Mediterranean in 2020: Possible Scenarios and Policy Recommendations" ELIAMEP Policy Paper, April 2016.

³ On October 25th a Russian Naval Task Group composed by the CV Admiral Kuznetsov, Cruiser Kirov, two Destroyers t. Udalov, two General Support Ships and two Ocean Tug boats crossed the strait of Gibraltar on its way to the coasts of Syria. The French aircraft carrier PA Charles De Gaulle task force, escorted by the FGs Cassard, Jean de Vienne, Chevalier Paul, the Sub Rubis and the GSS Marne, is already operating in the area. A combined attack plan against ISIS remains to be confirmed.

⁴ It is critical to plan and administer the after ISIS sovereignty issues. Turkey, Iraq and the, from many actors desired, under creation Kurdish state are claiming the right of possession.

However the popular support that offers ISIS legitimacy and the reasons of its creation will remain and the main problem caused by totalitarian Islamism will be contained rather than resolved. Eventually radical Islamic and terrorist groups will seek other ways of action and consequently tensions will intensify and the stability prospects will weaken. It is almost certain that the winner of this war will not be the party that has the newest and most expensive or sophisticated weaponry, but the party that manages to inspire and motivate the people. The easiest way is to welcome fleeing refugees, win the hearts of the people and engage them to a political solution inside their own countries.

Developments in Turkey

The July 15, 2016 military coup attempt in Turkey has driven Ankara into political chaos and raised some significant questions regarding its:

- Strategic orientation within the western geopolitical system. President Erdogan suspects certain western capitals of keeping distances from, if not secretly supporting, the coup attempt and feels threatened by the alliances signed by Cyprus, Egypt, Greece and Israel on economic, energy and security domains. He will probably try to counterbalance these fears by bridging his differences with Israel and Russia.
- Democratic and Islamic identity. The Turkish authorities are still detaining thousands of judges and suspending tens of thousands of education officials on suspicion that they may sympathize with the exiled Erdogan's opponent Fethullah Gulen, whom Turkey accuses of inspiring the coup attempt. The July 20 declaration of a three-month state of emergency, which was extended for another three month period on October 3rd, will allow the government to rule by decree and will test the democratic sensitivities of Turkey's allies. Furthermore President Erdogan's recent efforts to undermine the secular and cosmic western values introduced by Kemal Atatourk during the 20's and 30's, his openly declared strategic vision to transform Turkey's constitution and strengthen the Presidential powers and to revise the Lausanne Treaty complete a picture of uncertainty on his intentions to lead the country towards a deeper Islamic state much less moderate than today's and to challenge the geographical borders and zones of influence which were imposed almost 100 years ago.
- Ability to defend itself. In addition to his ambition to minimize the influence of the Kemalic tradition inside the Turkish society mentioned above, Erdogan's administration sensitive relationship with the Turkish military is under enormous tension as nearly one-fourth of all senior officers (one-third of the Air Force officers) have either been detained or arrested. This undermines the readiness of the Turkish armed forces in a period when the problems with ISIS and the Kurds are escalating and the situation in Syria is unstable.

Cooperation Prospects in the Energy Field

The recent developments on the energy field in the East Mediterranean, which complete the region's complex political situation, have significant impact and led to a growing geostrategic shift affecting all bordering countries, especially Cyprus, Egypt, Greece, Israel and Turkey. The question that remains to be answered is whether the prospects of exploitation of this geological wealth can become the driving force behind a future cooperation among all the countries of the area.

The signing of the agreement on energy cooperation among Cyprus, Greece and Israel in Nicosia in February 2016 and among Cyprus, Egypt and Greece initiated in 2013 and confirmed in Cairo on October 2016, have very important implications for the future of this region. These trilateral alliances are forming new regional alignments and balances, offer to all the members a sense of security, provide to Israel the much needed strategic depth and after the lifting of

sanctions against Iran can create new economic opportunities by exploring the potential in the domain of energy.

Publicly, all four allies declare that these agreements are not against any other country, meaning specifically Turkey. However the reality probably differs. The four countries were obliged to form trilateral alliances in order to confront Turkey's revisionist attitude and aggressive rhetoric. Of these countries, Israel, a strong USA ally, is considered a major military power. Egypt with its strong Army, under the new secular regime is facing some internal security problems has strengthened its position after the recent discovery of the huge "Zohr" deposit. Greece with its Naval, both commercial and military power, and the Republic of Cyprus, both members of the EU, complete the sides of the two triangles. At the same time both countries are facing economic problems and the Cyprus sovereignty problem remains unsolved¹.

Main Regional Actors Examination

Republic of Cyprus: The Republic of Cyprus is the only country that has been able to sign bilateral agreements that delimit and demarcate its EEZ respectively with Egypt February 17, 2003, Lebanon January 17, 2007, yet to be ratified and with Israel December 17, 2010.

The multilevel agreements Cyprus has signed with Egypt, Greece and Israel, address various issues like trade and tourism, with [energy cooperation](#) being the [central element](#) in all these partnerships. Besides these reasons, from Nicosia's perspective, security concerns impose another necessity for participating in regional alliances. More specifically, Turkey's threats against Cyprus' energy-related activities are added to the occupation of the northern part of the Island by Turkish military forces and amplify the pre-existing perceptions of Turkey as an aggressor. In this context, in addition to collective benefits in multiple sectors, the Cyprus - Egypt - Greece and Cyprus - Greece - Israel partnerships render Cyprus a part of a broader regional alliance that provides diplomatic, political and security support to the country. For Cyprus, the formation of these partnerships is unquestionably a positive development.

On the energy domain, at present, Cyprus does not possess enough reserves to build its own LNG exploitation infrastructure and facilities or a major pipeline to Greece or anywhere else outside the immediate vicinity of the island. The cost to develop a liquefaction plant is extremely high and only if more gas reserves are discovered in Cyprus (and Israel) over the next few years, a pipeline option to Greece and via Greece to Italy and the European market could become realistically feasible. Such a project though would still have to overcome major technical challenges due to the East Mediterranean's huge depth and the distance between Cyprus itself, the island of Crete and the Greek mainland. Similarly, initial thoughts to connect through a gas pipeline the island with the south Turkish coasts seem to be unrealistic as well, as long as a comprehensive settlement for the occupied northern part of the island can't be reached.

It seems that the only realistically feasible option for Nicosia is the collaboration with Cairo. In February 2015, Cyprus and Egypt signed a memorandum to explore the possibility of exporting gas to Egypt from "Aphrodite's" probable reserve, and in July 2015 the Egyptian side completed a pre-feasibility study on the cost of a potential pipeline connecting Egypt with "Aphrodite". The cooperation between the two countries was sealed in October 2016 after the meeting their leaders had in Cairo, in presence of the Greek Prime Minister A. Tsipras. The plan is not an easy one to complete², but it seems that the three countries are determined to proceed to it.

The possibility of a Turkish military strike against Cypriot LNG facilities or against the International Oil Companies (IOC) exploring the republic's hydrocarbon resources is not

¹ The northern third of the Republic of Cyprus is still occupied by Turkey after 42 years, a fact that both the US and the EU seem to forget.

² Theodoros Tsakiris. "The Gifts of Aphrodite: The Need for Competitive Pragmatism in Cypriot Gas Strategy." The S. Daniel Abraham Center for International and Regional Studies, February, 2016.

perceived as a serious risk by Nicosia nor Athens. Turkey will probably try to increase its diplomatic and economic pressure on the interested state parties, the EU and the IOCs that are involved (or are willing to get involved) in Cyprus. As Dr Th. Tsakiris argues, Nicosia will face a difficult diplomatic puzzle if Ankara decides to initiate its own exploration efforts in the occupied territories and waters of northern Cyprus in an attempt to counterbalance diplomatically the progress already made by the Republic of Cyprus since 2011.

Egypt: Egypt can have reasonable ambitions to become a gas hub for the Eastern Mediterranean countries and be the second, after Turkey, most important energy player in the region. “Discovering “Zohr” has not only altered the realities of Egypt’s domestic gas market, but has also forced its neighbors to revisit their own gas exploitation plans”¹.

Cyprus and Israel originally hoped to export some of their gas to Egypt for local consumption. However, with the “Zohr” discovery, such additional supplies will not be needed and both countries have been forced to seek out other options. As gas prices fell, Cyprus has indicated that its original plans to exploit “Aphrodite” gas are likely to be altered. In February 2015, Cairo signed a memorandum of understanding with Nicosia to transport potential production from the “Aphrodite” field. On August 31, 2015 Egypt and Cyprus signed a preliminary deal for an underwater pipeline. For Egypt, the deal is part of a broader strategy to position itself as a hub of energy development and consumption which envisaged starting production in 2020, via offshore pipelines directly to its mainland for re-export. Similar agreements were signed by Egypt and Israel. Re-exporting Israeli gas from the “Tamar” and “Leviathan” fields via Egyptian LNG is also a possibility, particularly given the existence of pipelines that already connect the two countries².

In addition to the military cooperation agreements signed with Cyprus and Greece, Cairo implemented some important defense contracts with France, Saudi Arabia and USA in an effort to modernize its armed forces and mainly its Navy. On June 17, 2015 two FPBG Ambassador Mk III type, built in the USA, arrived in Egypt. Two others were delivered in 2014. On June 23, 2015 the French FREMM class frigate “Taya Misr”, formerly “FS Normandie”, was officially received by the Egyptian Navy. Egypt has also ordered from France four corvettes Gowind 2500. The first one is planned to be launched on 2018 and will be built at Lorient shipyards, while the rest three in Egypt. Finally, on September 23, 2015 Cairo and Paris agreed on the delivery from France to the Egyptian Navy of two Helicopter carriers LHD Mistral type, initially intended to be sold to Russia. The first one was delivered on September 2016 and the second one will arrive in Alexandria in 2017.

These moves should be seen in association with the completion of the New Suez Canal Project in August 2015; its \$8 billion development cost was entirely financed by the Egyptian government. The new routes expanded the Canal’s capacity to 97 ships per day, and will gradually allow Egypt’s government to turn the whole Canal Zone into a giant commercial, logistical, ship-servicing and manufacturing hub.

The discovery of the huge “Zohr” gas field arrived on the right time to verify Egypt’s position as a powerful stability factor in the region and confirm President Abdel-Fattah al-Sisi determination “to solidify Egypt’s Democracy by strengthen its economy and defeat the terrorism.”

Greece: Greece has a long history within the Western geopolitical system and serves as a key strategic point for both the EU and NATO. The country forms Europe’s South Eastern flank and

¹ Carole Nakhle, “Egypt Discovery Transforms Petroleum Outlook in Eastern Mediterranean.” Op-Ed August 16, 2016, The Lebanese Center for Policy Studies

² “Two of its neighbors, Cyprus and Israel, making use of Egypt’s existing LNG facilities is a far better option than sinking the capital required to build new ones”. “Egypt: The Eastern Mediterranean’s Next Natural Gas Hub?” STRATFOR Analysis magazine. <https://www.stratfor.com/analysis/egypt-eastern-mediterraneans-next-natural-gas-hub>, September 5, 2016.

its long eastern borders are exposed to the volatile conflicts that unfold in North Africa and the Middle East. According to Admiral J. Stavridis, former NATO Supreme Allied Commander Europe, "Greece occupies a remarkable geopolitical position as a solid southeastern anchor to the NATO Alliance. The bases on Crete are particularly critical when looking at the instability in the Levant"¹. As seen in figure 2, its strategic location allows easy access to most of the hot spot in the vicinity².

Despite the ongoing financial difficulties, Greece is determined to defend its national interests. By dedicating important assets to Hellenic Navy is seeking the maximum availability of existing instruments and full coverage of surveillance needs, upgrades its underwater fleet capacity and completes all the remaining shipbuilding programs³. Admiral E. Apostolakis, Chief of the Hellenic National Defense General Staff, has repeatedly confirmed that the current financial crisis has not affected the readiness and capabilities of the Hellenic armed forces; Greece maintains its military power and is ready to confront any threat when needed. ISIS, the civil war in Syria and the state of anarchy prevailing in Libya have caused a humanitarian crisis as well as a serious security issue not only for Greece but also for Europe, Middle East and North Africa. The Hellenic Ministry of National Defense should now find the means to gradually increase its military presence in Crete by deploying a small naval task force⁴, two or three Special Forces units, further explore NMIOTC training capabilities and strengthen NATO's presence in the area⁵.

In addition to its openly declared position to deter every aggressor from any territorial claims, we think that Greece has to focus its diplomatic efforts towards two goals:

- Expand and intensify the already developed trilateral alliances with Cyprus, Egypt and Israel in order to be able to explore the possibilities of cooperation in the energy domain and strengthen its economy.
- By traditionally defending International law, building regional alliances, being an EU member and investing on its traditional good relations with the Arab community, Greece has the legitimacy to be the credible mediator between all the actors in the region. Athens should invest in this image, insist and invite Turkey to participate as an equal and honest member of a broader cooperation. The sensitive balance between enmity and amity should be gradually tilted towards the later and change the traditional rivalry behavior patterns. Exploring the recently discovered energy fields constitute a strong motive to all parts.

¹ Dr. Daniel Goure. "Souda Bay: NATO's Military Gem in the Eastern Mediterranean" Lexington Institute, March 2016.

² Souda Bay closely located to Hotspots: Suez Canal 575 miles, Israel 650 miles, Lebanon 675 miles, Black Sea 690 miles, Egypt 716 miles, Libya 752 miles, Syria 1200 miles, Iraq 1553 miles. Dr. Daniel Goure. "Souda Bay: NATO's Military Gem in the Eastern Mediterranean" Lexington Institute, March 2016.

³ In April and October 2014 one (1) modernized 209 type and three (3) new 214 type submarines joined Hellenic Fleet's submarine flotilla. The new FPBG Vosper class HS RITSOS was commissioned in January 2016 and two similar class FPBGs will reinforce the Hellenic Fleet in 2017 and 2018. In 2017 the first out of four (4) modernized MPA's will be operational.

⁴ A Naval group composed by two or three frigates, one submarine, one LPD and one General Support Ship.

⁵ In 2015, the Greek Minister of National Defence, Panos Kammenos, proposed the creation of a new NATO air base on an island in the Aegean in conjunction with the naval base at Souda Bay to facilitate the battle against ISIS, and called for cooperation between Egypt, Cyprus, and other Middle Eastern countries to fight the terrorist group.

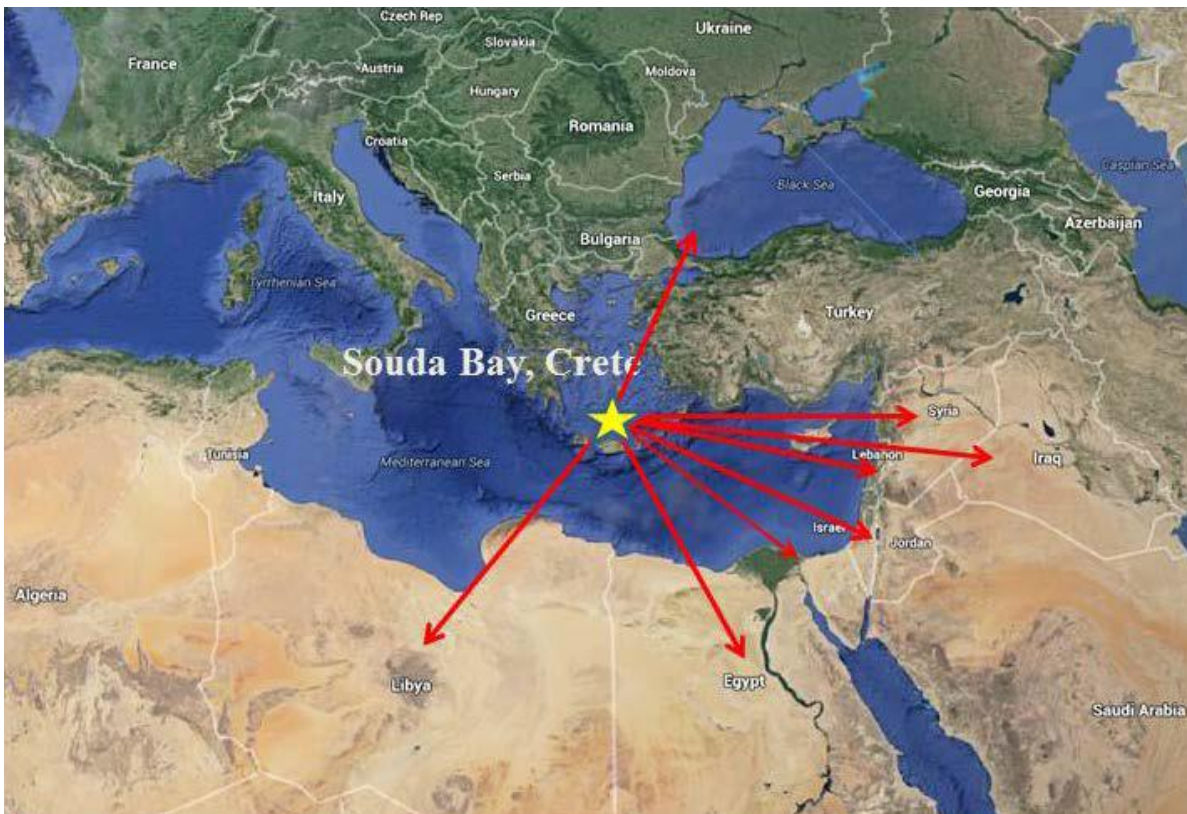


FIGURE 2. Souda Bay and Crete's Strategic Position¹

Israel: Since its creation Israel has been the closest USA ally in the Eastern Mediterranean area and the Middle East. Jerusalem's foreign policy has been always characterized by caution, determination and a pro-Western agenda. The political instability in the Eastern Mediterranean over the last years has rewarded this prudent and vigilant strategy.

As aforementioned, Israel has signed important cooperation agreements with Cyprus and Greece which allow the conduct of an indirect dialogue between Jerusalem and Cairo. In addition to those agreements, a similar strategic cooperation should be signed directly with Egypt too. Although not declaring it publicly both countries political and military leadership are trying to overcome the deeply rooted contradictions of their societies and engage into a closer cooperation. In fact, an agreement of such magnitude can't be imposed from top to down. It is paramount to be accepted by their citizens and that's were Cyprus and Greece can play a facilitator role.

Containing radical Islam is the main pylon upon which Jerusalem and Cairo can found common ground and move closer. The relations between the two countries have seen a noticeable improvement following the expulsion from power of Mohamed Morsi, as President Sisi's determination to confront with terrorism offers the right political signs to Jerusalem. Energy is another equally important pylon of this common ground. For Israel, as for every country in the region, the discovery of hydrocarbons has created an opportunity for increasing regional economic integration. Israel's initial ambition was to export gas to Europe, his biggest trade partner, by using Turkey's soil and pipelines as the most efficient route to the European market. The rapid deterioration of relations between Jerusalem and Ankara since 2010 obliged the first to

¹ Dr. Daniel Goure, "Souda Bay: NATO's Military Gem in the Eastern Mediterranean Lexington Institute, March 2016".

align its efforts with Cyprus and Greece. Both countries are EU member states and energy cooperation with them can be a profitable partnership. While [there are no guarantees](#) that the under discussion pipeline connection will work, Israel's actions reflect a determination to enhance this partnership. Signing the EEZ delineation agreement with Cyprus in 2010 and the deepening of the agreement with Cyprus and Greece in the domains of trade, tourism, environment and security in addition to the energy domain verify it. As mentioned earlier the "Zohr" discovery has changed the initial plans. Utilizing [Egypt's LNG plants](#) seems to be a more reasonable solution and a natural-gas deal can provide not only diversify and strengthen the relationship, but can also bring an economic boost for Israel and Cyprus as well¹.

Alongside with the signed agreements Israel is investing in security by increasing its own military capabilities. Although a close cooperation with the Hellenic Navy is being materialized, significant procurement and modernization programs aim to gradually increase the country's naval capabilities to the level of its air and army power. The mid-life modernization program for its three Sa'ar 5 class corvettes is underway and a new program of building four new Sa'ar 6 class corvettes from Germany has been signed. The eight Sa'ar 4.5 class FPBG modernization program started this year and Israeli's submarine fleet will be soon, by the end 2017, reinforced with three Dolphin II class Air Independent Propulsion technology submarines.

Turkey: Turkey is the biggest economic and military power in the region. It is considered to be the bridge between East and West and it's NATO's South-eastern border. She is the country with physical borders to Russia and the three of the most unstable countries in the rich in energy Middle East region, Iran, Iraq and Syria. From 1945 to 1991, Turkey was a key factor to the USA containment strategy against the Soviet Union due to its control of the Bosphorus strait.

The clear and relatively simple foreign strategy followed by Ankara until 1991 started to dissolve following the fall of the Soviet Union and took a completely different orientation in 2003 after the U.S. invasion of Iraq. From Turkey's point of view, the invasion was unnecessary, threatened to empower Iran, and by reintroducing and reinforcing the national aspirations of the Kurdish population in the area impose the country to serious domestic and internal political challenges. For the first time since 1945 Ankara not only refused to participate in an U.S. initiative, but also prevented the Americans from using Turkish territory to invade Iraq.

Turkey is emerging as a significant regional power and after the transformation of its ties with the U.S.A. it can consider developing relationships with other regional and non-regional actors. Turkey gradually improved its relations with EU², Russia, China and Iran mainly by taking advantage of its strategic geographical location and the energy routes that connect East with Europe. The country is currently in a transitional stage for a variety of reasons which include limited democratic legalization and serious questions on the country's democratic quality and the independence of judicial and media independence³, primitive and authoritarian institutions in managing regional affairs, an international community unwilling to accept Turkey as a major power with the right and the ability to support regional interventions, a region biased by old prevailing rivalries not yet prepared to view Turkey as a beneficial and stabilizing force and Ankara's aggressive leadership attitude. Turkey's new strategy is shaped by the following realities:

¹ "LNG has become extremely costly to develop even for Israel, which has the necessary reserves to build a commercially viable two-train LNG export facility. Unless new discoveries are made, a combination of pipeline and LNG exports is no longer a viable option for Israel or, for that matter Cyprus, or Cyprus and Israel together." Theodoros Tsakiris. "The Gifts of Aphrodite: The Need for Competitive Pragmatism in Cypriot Gas Strategy." The S. Daniel Abraham Center for International and Regional Studies, February, 2016.

² Turkey failed to integrate with EU for a host of reasons, the hostile relations with Greece and Cyprus, Europeans fears of massive Turkish immigration, reluctant adaptation to the European values.

³ Roy Karadag, "No True Democracy in Turkey without Peace", Carnegie Europe, <http://carnegieeurope.eu/strategieurope/64964>, October 27, 2016.

First, the country is rapidly developing demographically and economically and has the most powerful military in its region. Second, its frontiers are surrounded by increasingly unstable and dangerous neighbors. Third, although not encountering any immediate existential external threats, Turkey is facing a serious internal security problem with the Kurdish irredentism¹. Fourth, the long existing tension between the secular and the religious elements inside the Turkish society and the struggle to redefine its political and cultural identity regarding its position towards Islam is dominating its internal policy.

In a region of unstable powers, Turkey's relative strength is increasing thus providing Ankara with new options. It is one of the two (the other being Egypt) most important energy, oil and gas, hub in the high turbulent area of the Middle East and has the potential to play a leadership role in security, trade, economy and energy domains². However Ankara so far has not been established as proper energy leader in the region. It is reluctant to accept the International Law fundamental basis and the core western value that international actors negotiate on equal terms and common interests. "Instead, the country's actual foreign policy behavior is closer to a securitization strategy. It is less interested in gathering followers to work towards a shared objective than in exploiting the leverage gained from energy governance for other political purposes"³. This policy, which is rooted in old imperial attitudes coming back from the Ottoman Empire period, generates doubts to its neighbors regarding its real plans and turns them from potential allies to clear opponents. Ankara has to abandon rhetoric and actions that question the sovereignty of its neighbors and try to gradually create relations of trust based on the International Law⁴.

On the other hand it is for everybody's interest to engage Turkey in a way that its strategic link with Europe and the West is not broken. Turkey is a too valuable actor, an important ally to the West and is already being destabilized by the Kurdish issue, the war on ISIS and the internalization of Middle Eastern instability. "In a not distant future, it could become a gateway of Middle Eastern instability to Europe. It is in the interest of virtually all regional stakeholders, both friends and rivals, to avoid a further "Middleeasternization" of Turkey"⁵.

Political Prospects and Challenges

The improvement in relations between Greece and Israel which started in 2010 and gradually included Cyprus and Egypt constitutes for all four countries a win-win situation. 2016 has been characterized by an unprecedented diplomatic activity between the four capitals, a reality that

¹ The Kurdish problem is perhaps the only issue that can cancel Turkey's efforts to become a regional great power as it intersects with interests and balances not controlled by Ankara. For example, the question of Iraq's and Syria's future and the extent of autonomy the Kurdish region will enjoy will definitely have an effect on Turkish Kurds.

² In October 10, 2016 President Erdogan and his Russian counterpart, Vladimir Putin, signed an agreement on the Turkish Stream gas pipeline, which will bring Russian gas to Turkey and onward to the EU. "Turkey, Russia, and the European Diplomatic Chessboard" Posted by: [Marc Pierini](#) Monday, October 17, 2016.

³ Jörn Richert, Turkey's Energy Leadership Ambitions and Their Implications for Energy Governance in the Eastern Mediterranean. The S. Daniel Abraham Center for International and Regional Studies, February, 2016.

⁴ It is a painful and long procedure. Greece can be Turkey's main ally in this effort. Its honest and open attitude after the recent military coup proves it.

⁵ Emiliano Alessandri, "Scenarios for the East Mediterranean: The Pessimistic / Catastrophic Outcome" "The East Med in 2020: Possible Scenarios and Policy Recommendations" ELIAMEP Policy Paper, April 2016.

suggests the emergence of a new geopolitical partnership in the region. This new partnership has political, economic and security significance, and although it was initiated by the need to counterweight Turkish ambitions it should not be perceived as such. Economic opportunities created by the discovery of hydrocarbons are the primary reason for Cyprus, Egypt, Greece and Israel recent closer partnership. There is no doubt that these dynamics have been built by each country's ongoing tensions with Turkey. However, the energy field can have great integrating powers and would serve to alleviate some of these disputes. If handled in the right way, energy policy can create important geopolitical synergies, which can serve not only to mitigate conflict, but to actually provide a solid basis for long-term cooperation and economic development in the region. We strongly believe that if all countries want to prosper, energy ambitions should be seen as an opportunity of cooperation and not confrontation. Turkey is a significant actor and could be an equal party and valuable ally in this process of economic integration, but has yet to demonstrate the will to abide with the International Law and the necessary flexibility to reach an honest settlement with its neighbors.

EAST MEDITERRANEAN PERSPECTIVES AND ITS IMPORTANCE TO GREECE

Starting from the year 2.000, several offshore Exploration and Production (E&P) contracts have been signed between several oil companies and countries like Cyprus, Egypt and Israel (Noble Energy, Delek, Avner, BP, SHELL, TOTAL, ENI, etc). These contracts defined the technical, economical and legal rights provided to the oil companies in order to locate, find, develop and produce oil or gas from the oil fields discovered into the contractual concession areas (Blocks). Till September 2015 companies' exploration investments allowed oil companies to discover important gas fields like "Dalit", "Tamar", "Leviathan" and "Aphrodite" to localize some similar geological drilling targets (Fig.1). All these field discoveries concerned sandstone reservoirs. Apart these sandstone reservoir plays, a new limestone reservoir play emerged very recently - beginning September 2015 - thanks to ENI's supergiant biogenic natural gas discovery, the "Zohr" gas field (Fig.1). These new plays lead not only to a great commercial success but also to a scientific one, in the sense that has shown us possible presence of further new giant exploration biogenic gas targets offshore Cyprus, Greece, Egypt, Lebanon and Israel. All these perspectives could in the long term improve above countries economics and energy security of supply and in parallel contribute to the security of natural gas supply of the European Union.

Concerning Egypt with its 80 million inhabitants, and Greece with its 11 million inhabitants, it is interesting to notice that they have about the same annual gross domestic product (GDP), i.e. round 235 billion €. In parallel in the middle of a serious global economic crisis Greece is struggling in a perplexed way to survive and not to collapse financially. In the opposite Egypt following a specific strategy plan, took care in time of energy matters early on and managed through a specific exploration schedule to discover in September 2015 a real treasure, the supergiant "Zohr" biogenic natural gas field. This was of course realized thanks to the Italian company ENI and through this specific discovery the Egyptian economy and the Egyptian internal energy problems have been nearly both solved.

"Zohr" is located 150 km from the Egyptian sea shore at sea water depth of 1.450 meters, and his production will require ENI to drill several wells in 4.300 m drilling depths below the sea bottom. Field development investments could reach around \$12 billion. "Zohr" limestone reservoir gas water contact touches the point of Egyptian offshore EEZ sea boundaries with the Cypriot ones and is estimated to contain recoverable proven reserves (with 90% probability) of approximately 26 trillion cubic feet (Tcf), while the Egyptian state company E-GAS estimated recently total possible reserves (with 10% probability) being about 60 trillion cubic feet. ENI has

stressed that - from a geological point of view - this kind of giant biogenic gas discovery trapped into a karstified limestone reservoir (reef), was something that happened for the first time in the Mediterranean Sea. In order to locate the “Zohr” discovery, ENI used his experience from an analog previous identification case in Venezuela, the “Perla” biogenic gas field. “Perla” gas field - the biggest South American one - was discovered in 2009 with total in place reserves of about 17 Tcf. Paleogeographically the “Perla” structure was created in a similar to “Zohr” way at the edge of an extremely salty paleo-lagoon during the miocene era, actually is located near the well known as “Maracaibo Lake”.

Recent studies of the University of Columbia (Fig. 3, William Ryan, 2008) and studies from the Netherlands Utrecht University showed the existence of analog to the Zohr biogenic gas field geological areas. These specific geological sites could be part of Miocene age paleolagoons created during late Miocene age in the East Mediterranean region.

We believe that these areas should receive special exploration attention because they have reasonable chances to include important strategic biogenic natural gas reserves trapped into karstified limestone reservoirs. We observe that the areas south of Crete are particularly very interesting areas for further oil and gas exploration. Karstified gas reservoirs have significant advantages over other kind of classical reservoirs. As an example the Egyptian “Zhor” Gas Field covering an area of 100 square kilometers (km²) contains 26 Tcf. Compared to the Cypriot Sandstone one Reservoir - the “Aphrodite” gas field - covering also a similar area of 100 km² with recoverable reserves 5 times smaller, about 5 Tcf. High gas productivity per well is another important factor related to the economics and the commerciality of this kind of reef type gas fields.

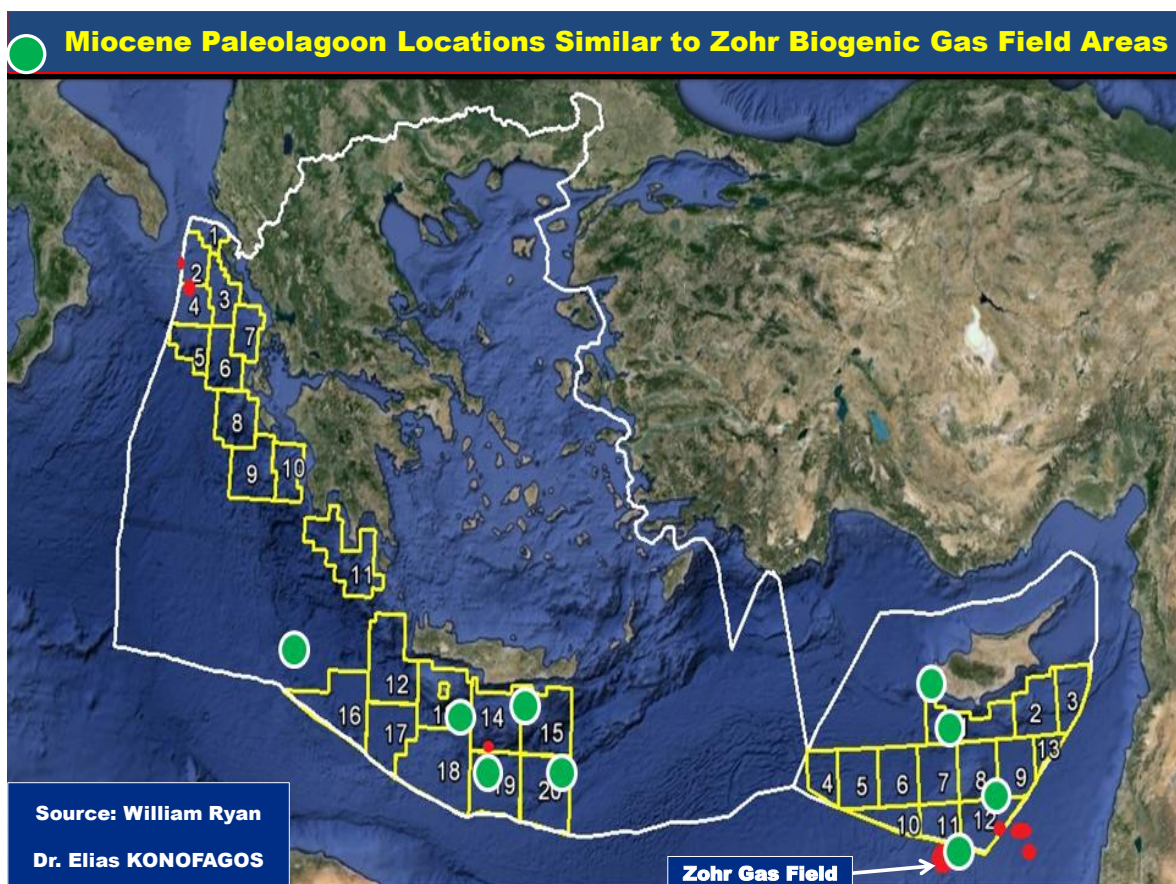


FIGURE 3. Miocene age paleolagoons locations.

The above observations showed us the importance on identifying biogenic natural gas accumulations - in the East Mediterranean region - trapped into karstified limestone reservoirs against the classical perception on localizing pyrololitic natural gas deposits into sandstone reservoirs. Localization of such reservoirs need advanced technology models based on high quality offshore 3D Seismic recordings. We must therefore notice that there is an urgent need - specially from the part of the Greek State - to take a new positioning related to hydrocarbons exploration and production concessions strategy into the Greek deep sea waters. This strategy should have as its ultimate goal to attract major oil companies, which could invest the necessary funds with the main aim to efficiently localize strategic gas reserves into the Greek EEZ through a new exploration model similar to the one suggested by the Italian Company ENI.

We see therefore that, based on Greek domestic natural gas prices, the Egyptian supergiant "Zohr" gas reserves exceeds the gross value of 260 billion €, which represents at least the annual gross national product of Greece or Egypt. Based on all the above, we wonder with some surprise, that a country like Greece, which actually lives on imports of goods, is still hesitating to develop a strategic plan similar to what Egypt has already opted for: creation of Mineral Wealth. A new Greek Exploration Strategy must be created taking into account that geologists are already aware, that exploration priorities and methods in the East Mediterranean regarding giant discoveries of biogenic gas reserves have very recently changed radically. Despite the presently very low oil prices in the International market and taking into account that oil and gas offshore exploration and production campaigns last for decades, it is about time for the new Greek government to become alert and attempt to attract appropriate investors in a new strategic spirit, as Cyprus, Egypt and Israel have already done so effectively in the past. The most promising area for discovering new gas reserves in the region seems to be the south of Crete area, where major geological biogenic accumulation targets - similar to that of the supergiant Zohr gas field - could be discovered.

TECHNICAL PRODUCTION COST OF THE EAST MEDITERRANEAN GAS FIELDS

When an oil company makes a natural gas field discovery into a specific offshore concession block he has at first to determine if his find is a commercial one. Commerciality depends not only on the technical characteristics and the amount of gas reserves discovered but also on the contractual terms signed between the oil company and the host country (production sharing terms or royalty + tax terms) and of course on the current, medium term and expected long-term gas prices. Very recently (between 2011 and 2016) we have experience an important collapse of the gas prices in the international market of about 50% (Fig. 4). Taking into account this recent collapse of gas prices it remains interesting to investigate if offshore deep or ultra deep (1.500 m sea water depth) east Mediterranean recent or expected future discoveries can remain commercially attractive for the International Oil Companies (IOC's) in the region for the medium & long term future exploration campaigns.

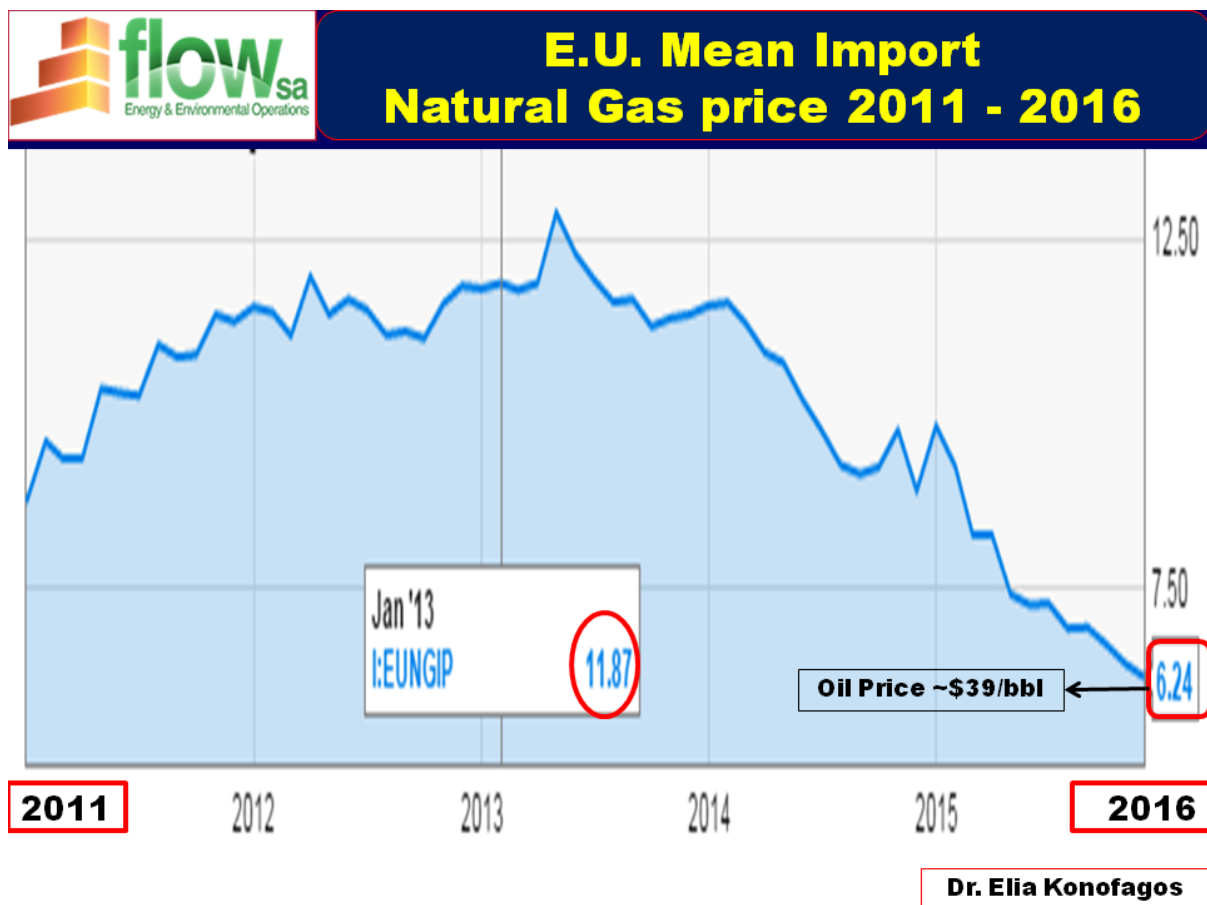


FIGURE 4. EU Mean Import Natural Gas Prices 2010 - 16

Apart the above considerations on commerciality following a gas find in the east Mediterranean region, countries like Cyprus, Egypt and Israel have at first to attract experienced and wealthy investors offshore in order to locate, drilling, develop and produce hydrocarbon accumulations. So the most important factor in attracting investors for such objectives is the expected level of the “Technical Production Cost” in the region for finding, developing and producing such sandstone or limestone gas reservoirs. “Technical Production Cost” (T.P.C.) is a cost - before royalty, taxes or profit - which includes financing costs and which is usually expressed in \$/Mcf (dollar per thousand cubic feet) or in \$/boe (dollar per barrel of oil equivalent) and which is defined as the ratio of the overall investments for finding, develop and produce a natural gas field divided by the total expected recoverable gas reservoir reserves:

$$T.P.C. = \frac{\text{Total Cost (F\&D Expenses + OPEX)}}{\text{Total Recoverable Reserves}}$$

F&D = Finding & Development
OPEX = Operating Expenses

Taking into account that all existing technical and economic information on gas fields already developed (“Tamar” gas field), fields under development (“Zohr” gas field) or to be discovered and developed in the region, we have assessed the order of magnitude of the technical production costs level of all these gas fields. The annual operating expenses were estimated being from 8%

to 12% of the total find and development expenses. The commerciality of these fields depends of course from the level of technical production cost achieved by the IOC's but also from the level of gas prices guaranteed by the contract signed between the state and the operating oil companies and from the relevant production sharing terms (or royalty + tax terms) included into the same concession contract.

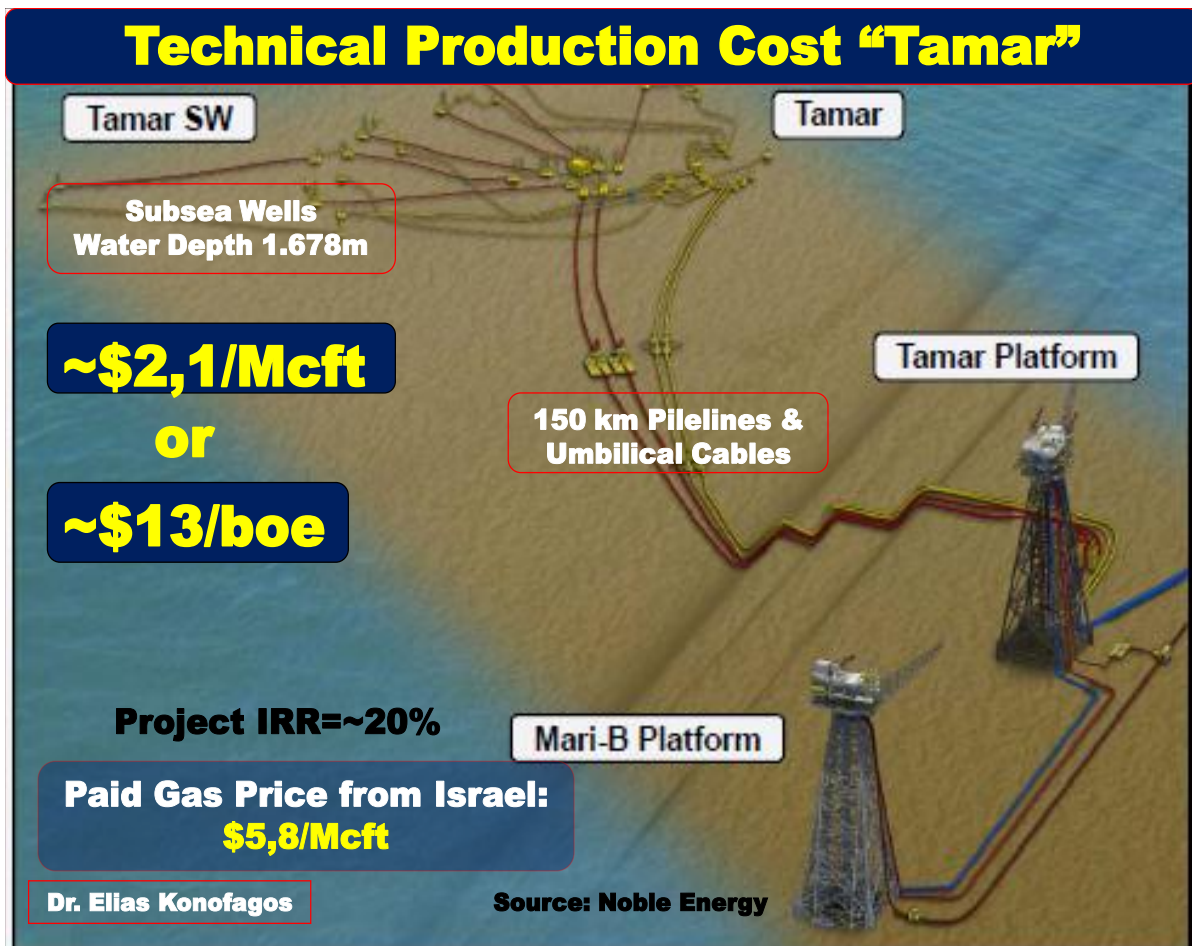


FIGURE 5. "Tamar's" Technical Production Cost

Today "Tamar" gas field with 8,4 Tcf recoverable reserves covers entirely Israel natural gas needs and will still secure his natural gas needs for at least 20 years long. The field located at 1.688 m water depth, was discovered in 2009 and started production only four years later, in 2013. Exploration cost reached before development ~\$1 billion and the field was entirely developed through subsea well heads and subsea facilities. Yearly production of 420 Bcf is carried out by using 7 wells connected by a 150 km long subsea double pipe tie-back to a gas processing Tamar steel platform located offshore Ashkelon near the Israeli sea shore (Fig. 5). Finding and Development (F&D) cost reached ~\$6 billion. Unmanned field production management ensured through 240 km subsea steel tube umbilical's guided from Tamar platform operating rooms. Annual operating costs were estimated at about \$600 million.

Based on the above data "Tamar" technical production cost was evaluated at a level of ~\$2,1/Mcf or ~\$13/boe. Taking into account that the Israeli government buys the "Tamar" gas at a price of ~\$5,8/Mcf and that contract terms provide for a 66% royalty plus tax share for the Israeli state, we have calculated that project's Interl Rate of Return (IRR) could reach ~20% (Fig. 5).

Development of the supergiant gas field “Zohr” by the Italian company ENI, received a few weeks ago the green light by the Egyptian government. “Zohr” is located in water depth of ~1.500m into the “Shorouk” Block 9 (Fig. 3) and the field is expected be developed in three phases (Fig. 6).

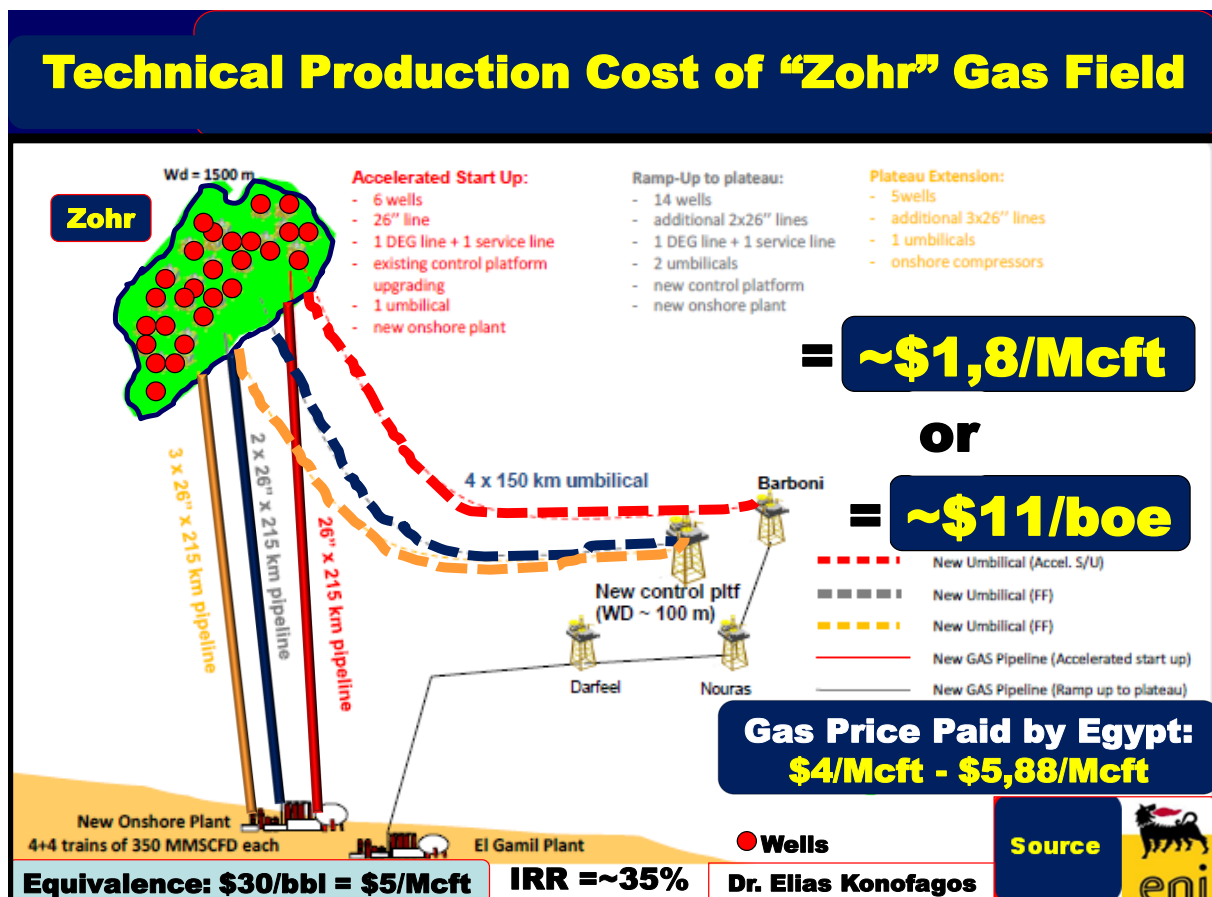


FIGURE 6. “Zohr’s” Technical Production Cost

ENI planned to develop the 26 Tcf field gas reserves without using any floating processing units (like in the “Tamar” case). Full yearly production of 900 Bcf will be assured by using 26 wells and by conveying the gas to shore through three 215 km long subsea pipelines. According to ENI sources, investment for developing this field could reach a total amount of ~\$9 billion. Nevertheless taking into account that well tests have shown recently presence of H₂S (hydrogen sulphide) into this biogenic lean natural gas, we have provided a much higher development costs of about ~\$11 billion. Field unmanned production will be managed by subsea steel tube umbilical's, guided from a control room to be constructed on a pretty new fixed steel platform located at 100 meters water depth near the Egyptian sea shore. Yearly operating costs were considered at ~\$1,1 billion.

Based on the above data “Zohr” technical production cost could reach ~\$1,8/Mcf or ~\$11/boe. Taking also into account that the Egyptian government is committed contractually to buy the “Zohr” natural gas at prices being between \$4/Mcf and \$5,88/Mcf, a \$5/Mcf price case brings “Zohr” project IRR at a ~35% level. This IRR was calculated by taking into account a 65% - 35% production sharing term, condition that has already been agreed and signed between the Egyptian government and ENI (Fig. 6).

Taking into account that in the medium term new natural gas discoveries could also occur south of Cyprus and south of the island of Crete, we have tried to see if smaller discoveries of about only ~2,5 Tcf recoverable gas (half of Cyprus “Aphrodite” field) at water depths of 1.500 m, could still be considered commercially viable in the region (Fig. 7).

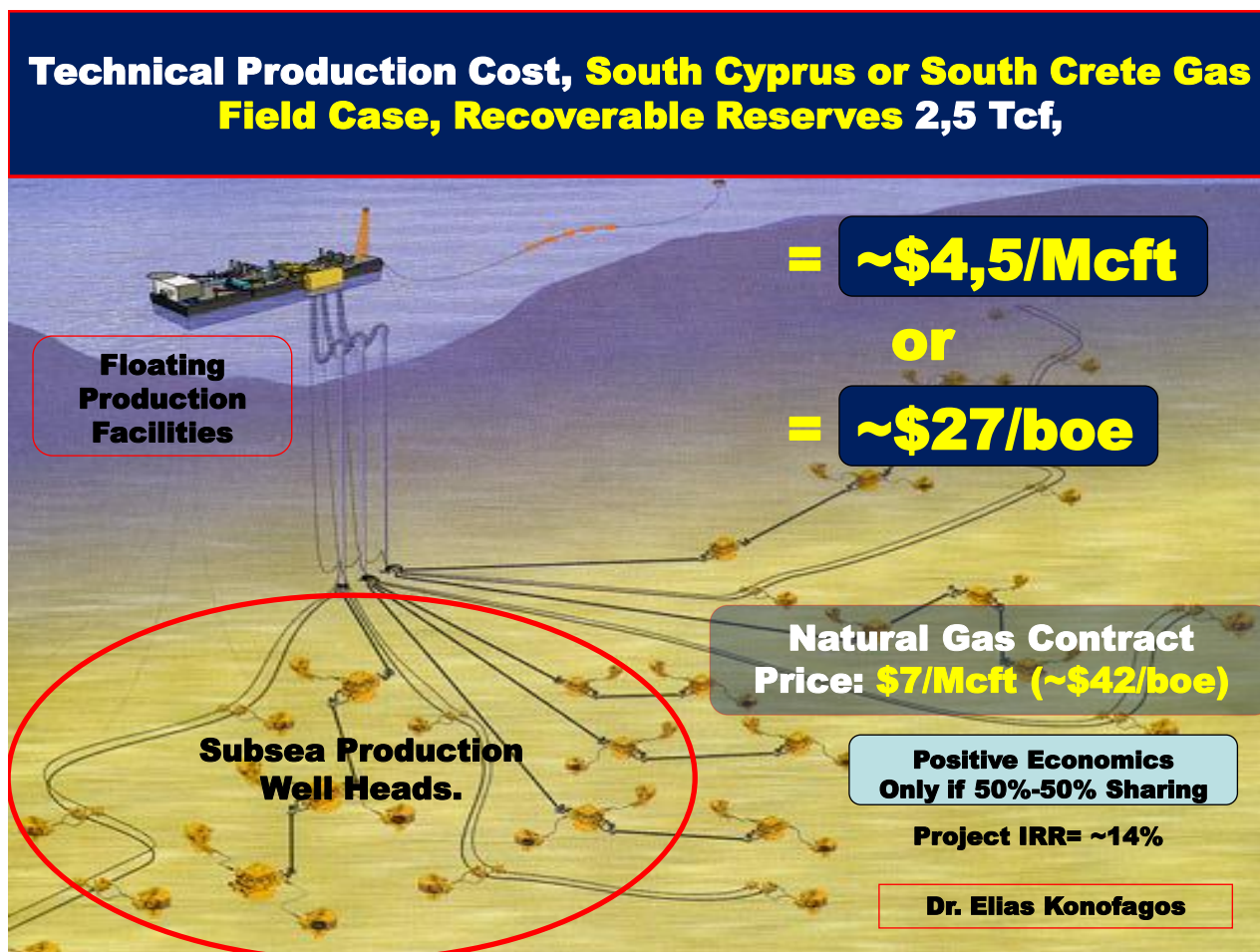


FIGURE 7. Technical Production Cost, Cyprus – south Crete

In order to minimize production investments we have considered development schemes using a combination of subsea production well heads, flexible production lines and floating production processing facilities. The gas was considered to be delivered by pipelines to shore at a distance of 70 km. Reservoir drilling depths were considered ~3.000m with a yearly production plateau reaching 150 Bcf. Mean finding and development cost of such a project could be of the order of \$4 billion accompanied by a yearly operating cost of ~\$360 million. Technical production cost was estimated at ~\$4,5/Mcf or \$27/boe (Fig. 7).

The economic analysis of such a case showed that this field can be considered commercially viable only if gas market prices could reach a level of \$7/Mcf and if Contractual terms could allow a production sharing of 50% for the state and 50% for the Company/ies. In such a case IRR could reach a level of ~14%.

Concluding giant field gas discoveries can have in practice very low technical production costs provided that productivity of the subsea development production wells are high and that an attractive natural gas market exists near the gas discoveries. The great difference between an oil

field discovery and a natural gas discovery is that in the case of an oil field discovery oil has the same price everywhere in the world. In the opposite natural gas prices depends on the distance of the natural gas discovery from his natural gas commercial delivery market.

CYPRUS 3rd ROUND AND EXPECTED HUGE PERSPECTIVES

On March 24th the 3rd Cyprus Licensing round was announced. His target was to attract new oil and gas exploration production investments from oil companies into the Cypriot blocks 6, 8 & 10 of the Cyprus EEZ. This event represents an important step for improving further the existing already positive economic development of the island (Fig. 8). This 3rd Cyprus licensing round was entirely based in the new geological exploration model which permitted to the Italian oil company ENI to discover the Egyptian supergiant biogenic gas field “Zohr” - only 6 months way - located in the Cyprus EEZ border with Egypt.

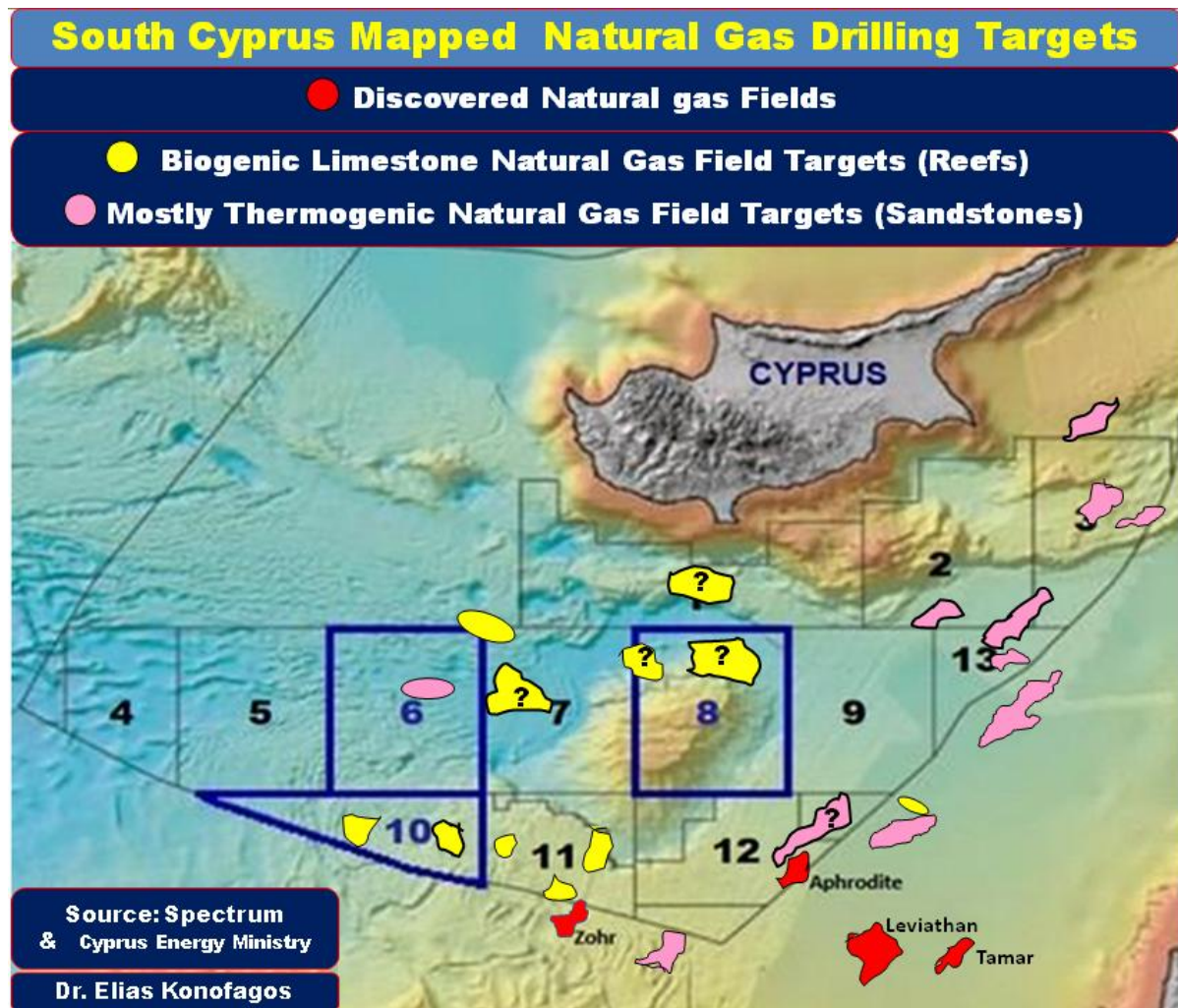


FIGURE 8. South Cyprus Mapped Natural Gas Drilling Targets

“Zohr” karstified limestone gas field is the biggest natural gas field in the Mediterranean and one of the biggest field in the world. Through recent publications we have shown that a certain

number of karstified limestone structures have been created in the edge of Mediterranean paleolagoons during the Miocene period. These Mediterranean paleolagoons fed these karstified reef type high porosity limestone reservoirs with biogenic natural gas. From a first analysis of a geophysical study published by the geophysical company Spectrum which has been conducted around south Cyprus subsea “Eratosthenes” sea mount area we have found that “Zohr” biogenic gas limestone reef type structure is not the last one but only the beginning of a series of at least 10 other similar structures. We have investigated more precisely to locate and map all these new limestone play structures (colored in yellow) into the south Cyprus blocks map. Yellow structures with question mark on them have to be studied further in order to confirm with more recent geophysical data closure existence, size and reservoir type.

From a first look on this map (Fig. 8) we have found that into the Cyprus block 10 two “Zohr” type structures are present and both of them seems to be bigger than the already discovered “Zohr” gas field. The block 11 includes also similar to Zohr type reservoir targets & one of them is expected to be drilled during the first months of 2017. Into the Block 7 a target 5 times bigger than the “Zohr” one has been identified. The government of Cyprus avoided including the Block 7 into the recent Cyprus licensing round possibly wanting to preserve this Block as a strategic natural gas reserve. We must also notice that a big sandstone type reservoir target exists into the Cyprus Block 6 and his size is about the one of Leviathan gas field. Of course more accurate existence of all the above targets will be investigated further from the oil companies through seismic 3D recordings and by exploration wells.

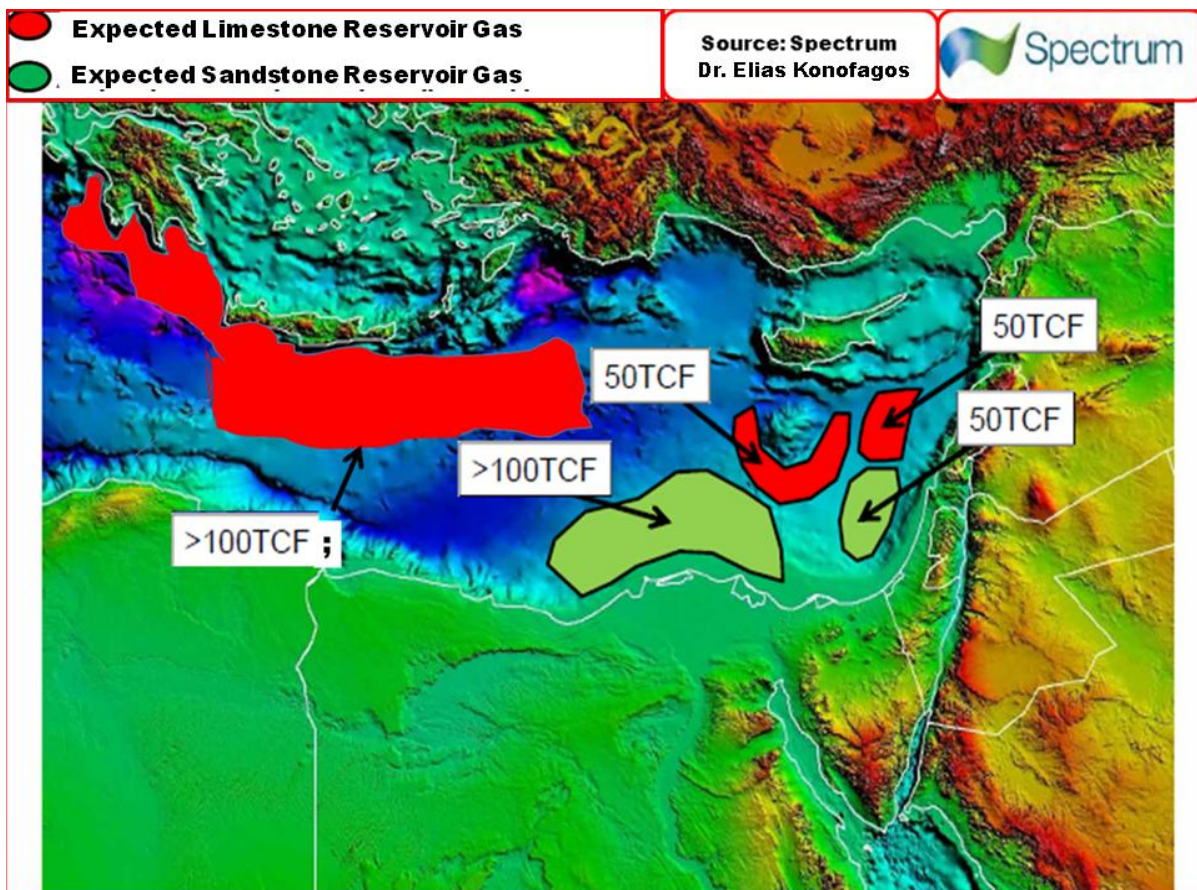


FIGURE 9. Expected Limestone and Sandstone Reservoir Gas

This new map show us that in the case of new giant or supergiant gas discoveries in Cyprus the economic growth for the country could reach much higher levels. According to Spectrum, with 50% probability, in the south Cyprus area we could expect biogenic gas limestone reservoirs gas resources of about 50 Tcf. The same amount is expected also to be explored in the western costs of Lebanon (Fig. 9). According to our evaluations, despite the existing geological complexity of south Crete offshore areas, this huge area could contain, with 50% probability, resources exceeding 100 Tcf.

Based on the above perspectives the 3rd Cyprus Licensing Round received a certain number of very interesting offers from energy giant oil companies:

- EXXON - MOBIL - QATARPETROLEUM, ENI - TOTAL, STATOIL, CAIRN -DELEK - AVNER for the Block 10.
- TOTAL - ENI for the Block 6.
- ENI, CAPRICORN OIL - DELEK - AVNER for the Block 8.

CONCLUSIONS

East Mediterranean is well located for resources development, with its proximity to Europe and the Suez Canal (a route to export its natural gas to Asia). In addition, it provides a diversification option for European gas supply (as it allows bypassing the existing and potential pipeline routes from/via Russia and Turkey). At the same time, the region suffers from substantial geopolitical tensions which may lead even to territorial disputes. In this unstable environment Cyprus has signed EEZ delimitation agreements with Egypt, Israel and Lebanon, but not with Turkey or Syria. Moreover, Israel and Lebanon have a disputed maritime border which could affect Cyprus should they wish to pursue tripartite collaboration.

Unfortunately, the countries in the region, trapped in old antagonistic behavioral patterns, haven't yet developed a comprehensive and successful energy policy that takes into account the above mentioned challenges along with the region's geopolitical changes. In the absence of the export option within an effective policy scheme, not only they will be hard-pressed to attract companies for upstream business, but the development of their resources may be seriously delayed.

This brings us to the future export potential of the countries in the region. The future of whole East Mediterranean region depends on the expected evolution in the international market. Taking into account that oil and gas offshore exploration and production campaigns last for decades and despite the current unstable geopolitical situation in the East Mediterranean and the presently low gas prices in the International market, it is about time for Cyprus, Egypt, Greece, Israel, Lebanon and Turkey to resolve their security disputes and by coordinating their actions attempt, without further delay, to attract appropriate serious investors in a new strategic spirit. This spirit has to facilitate development synergies by improving production infrastructures in the region and adopt much more flexible contractual terms and conditions for the IOC's. The forthcoming medium term presence of several centers of production facilities in the region will minimize deep and ultra deep regional natural gas production costs. Production infrastructure operations must be protected by efficient security measures insuring them from any kind of piracy, terrorist or military attack. Through new contractual terms and conditions between the oil companies and the host countries, the East Mediterranean natural gas resources could find the way to reach easier the European market either in the form of CNG, LNG or through appropriate pipelines network.

According to BP (2013), the global proved reserves of natural gas (those that can be recovered with reasonable certainty in the future from known reservoirs under existing economic and operating conditions) are 6,600 Tcf, including Russia's reserves of 1,160 Tcf, Qatar's reserves of 880 Tcf, and Turkmenistan's reserves of 620 Tcf. In addition, there is a substantial potential for shale gas with a recent estimate of 7,200 Tcf of technically recoverable resources

(EIA, 2013). To put these numbers into context, global gas use in 2012 was 117 Tcf (BP, 2013). There are plenty of alternative gas suppliers to satisfy a projected increase in global natural gas demand. Due to its location and geopolitical considerations, Eastern Mediterranean gas has a great potential but most likely it will not be a major player in global gas markets as this has happened in the Qatar case.

Apart these considerations, according to recent FLOW Energy studies, Greece remains the most unexplored country in the East Mediterranean region, more particularly in its deep and ultra deep offshore areas. Based on the ratio of the already discovered reserves versus to the resources yet to be found, Greece remains the third most unexplored country in the world after Morocco and South Africa. In accordance to International Law Greece claims an offshore EEZ of about 500.000 km². For comparison Qatar state owns an exclusive economic zone of about only 32.000 km². In 2013 a first 220.000 km² non exclusive seismic campaign was executed by the Norwegian company PGS into the western's Greek EEZ which included Ionian and Libyan sea areas. PGS recorded more than 12.000 km of seismic lines, for identifying possible oil and gas fields, in sea water depths varying between 500 m to 3.500 m. Recent initial seismic fast track interpretations followed by offshore geostatistics related to the Greek continental shelf indicated that the biggest expected oil and gas possible reserves targets are mostly located in deep and ultra deep Greek sea waters. Cypriot and Israeli gas field discoveries were also located in ultra deep water depths exceeding 1.500 m and in drilling depths of about 5.500 m under the seabed. We must also notice that East Mediterranean drilling costs were found being between \$70 million to \$120 million per well. It is estimated that completion of exploration efforts into offshore sedimentary geological basins of the Ionian and south Crete areas - in totally unexplored frontier zones - will require investments that could reach a minimum amount of 27 billion € into the next 40 years. The determination of attractive exploration licensing blocks into the existing geological basins of this wide offshore area of 220.000 km², according to our estimation, a first group of 20 blocks can be created, taking in account the local geological risk.

The next step for attracting E&P investments into the Greek offshore areas is the announcement of a Licensing Round where companies are required to submit bids for each of the blocks based to the terms of the tender compatible to the Greek Law and the EU directives and international petroleum contract standards. Following Offers Evaluation, Successful Bidders are invited to negotiate Exploration and Production contracts. Usually negotiations can last from 6 months to 1 year period, for an exploration period of 8 years and production period of 25 to 35 years. According to the Greek petroleum law based on European Union directive, concessions can also be granted through bid procedures out of Rounds, in case that company/ies make an application for acquiring a specific exploration area. In case of discovery the Greek petroleum tax provides for a tax of 25% constant for 25 years. This can be considered as a very attractive case. In the past (1995 - 1999) only two offshore seismic survey activities have been carried out in country, one in the Ionian sea and one in northern Greece. It should be emphasized that at that period there existed a dedicated state company (DEP-EKY subsidiary of the Public Petroleum Corporation of Greece) exclusively responsible for all upstream activities in Greece and abroad. Both the natural environments of the Survey Area as well as the "Greek bureaucratic environment" are indeed very challenging - and sometimes the latter is much more challenging than the former. For the specific activities, things are further complicated by the fact that currently Greece does not have a dedicated entity (like DEP-EKY) with experienced personnel on issues relating to hydrocarbon exploration. Experience has shown that foreign investors need expert local advice and services to assist them in the efficient execution of their projects and in the "navigation" through the confusing maze of the Greek bureaucracy thus avoiding major delays.

Concerning future oil and gas discoveries in Greece, the region's resources may significantly change the energy picture in the wider East Mediterranean region if they will be developed in a timely and successful way. Of course developing these resources will require overcoming numerous major obstacles with geopolitical implications. Today Cyprus, Egypt, Greece and Israel

with all other surrounding Middle East countries can be considered as a potential long term gas security axis supplying European countries. Based on forthcoming further production oil and gas infrastructure in Cyprus Egypt and Israel, Greece must attract similar investors in order to soon create his own infrastructure in this joint effort. Under the current adverse conditions, Greece can reestablish its economic position by exploiting its hydrocarbons potential, integrating the whole South East Mediterranean energy reserves, improving the long term energy security of the E.U. and making the rest of the reserves of Cyprus, Egypt, Israel, Lebanon, Syria and Turkey more economically attractive in the long run. By unified reserves and natural gas network, the region should and can consider all the natural gas and hydrocarbons export possibilities (Pipeline or maritime LNG or CNG transport etc) in a competitive framework. Joint energy synergies in the whole East Mediterranean region will certainly contribute to a peaceful better future for the region. If handled in the right way, energy policy can initiate important geopolitical partnerships, which can serve not only to mitigate conflict but to actually provide a solid basis for long-term cooperation and economic development in the region. We strongly believe that if all countries want to prosper, energy ambitions should be seen as an opportunity of cooperation and not confrontation.

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Dyslexia, Relevant Learning Disabilities and Biological Parameters – An Approach across Languages with Different Orthographies

G.I.Sakellariou^a

^a*Division of Academic Studies, Hellenic Navy Petty Officers' Academy, Skaramagkas, P.C. 12400, Greece*

Abstract. In this paper, there will be an initial attempt to briefly introduce and define dyslexia. Subsequently, learning disabilities accompanying dyslexia will be presented, followed by an analysis of dyslexia on the basis of biological factors such as age and gender. In continuation, dyslexia is examined across languages with different orthographies.

Keywords: dyslexia, disorder, learning difficulty, learning disabilities, dysgraphia, dyspraxia, developmental coordination disorder, attention – deficit / hyperactivity disorder, auditory processing disorder, age, gender, alphabetic orthographies, logographic orthographies, transparent writing system, arbitrary writing system.

DEFINITIONS

Dyslexia is a neurodevelopmental disorder with a probable genetic basis. The core feature of dyslexia is a problem with word decoding, which in turn impacts spelling performance and the development of reading fluency. Thus, dyslexia is considered to be both a spelling and a reading disorder. For many years, dyslexia was conceptualized as a specific reading difficulty affecting children for whom reading achievement was below than expected on the basis of their age and attributed in many cases to a below-than-average intelligence quotient (IQ). However, it is now recognized that dyslexia occurs across the IQ spectrum [1].

The term “dyslexia” is Greek and means “difficulty with reading words.” There are various definitions of dyslexia, ranging from “difficulty with spelling, phonological processing or rapid visual-verbal responding” [2] to “a learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling” [3]. It is characterized by “difficulties in phonological awareness, verbal memory and verbal processing speed” [4]. Developmental dyslexia (DD) is defined as a specific deficit in reading acquisition that cannot be accounted for by low IQ, poor educational opportunities or an obvious sensory or neurological damage [5].

LEARNING DISABILITIES ACCOMPANYING DYSLEXIA

Learning disabilities which accompany the reading disorder of dyslexia are attention – deficit / hyperactivity disorder, dysgraphia, developmental coordination disorder and auditory processing disorder.

Attention-deficit/hyperactivity disorder (ADHD) is a brain disorder marked by an ongoing pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development [6]. About 15% of people with dyslexia also have ADHD and 35% of those with ADHD have dyslexia [7]. Another source suggests that ADHD occurs in 12–24% of all individuals

with dyslexia [8]. Children with ADHD often move more quickly than other children into a state of high agitation or excitement, talk incessantly and loudly, frequently switch from one activity to another without pause, cannot filter out unimportant stimuli, have low self-esteem and often dislike themselves, are often remorseful after behaving 'badly'[9]. This generalized "lack of focus" is found in cases of dyslexia as well. Both individuals diagnosed with dyslexia and individuals diagnosed with ADHD may resort to disruptive behavior to avoid scheduled schoolwork or may have low self-esteem. However, a dyslexic is unlikely to show the symptoms of hyperactivity and impulsiveness that are common in ADHD.

Dysgraphia is a disorder characterized by writing difficulties. More specifically, it is defined as a difficulty in automatically remembering and mastering the sequence of muscle motor movements for writing letters or numbers [10]. Since **handwriting skills require memory** for the movement path for each letter as well as for how letters connect, children with memory and/or attention deficits can have difficulty mastering handwriting skills. Dyslexic children, whose difficulties begin with *speech sound awareness*, typically have difficulty with the fluent and unconscious association of *phonemes* (speech sounds) to *graphemes* (letter symbols). Dyslexic dysgraphia is due to various factors such as difficulty retrieving the visual picture of words required for spelling. In dyslexic dysgraphia, spontaneously written text is illegible when complex. Oral spelling is poor, but drawing and copying of written text are relatively normal.

Dyspraxia, a form of developmental coordination disorder (DCD), is a disorder affecting fine and/or gross motor coordination in children and adults and, possibly, speech. DCD is a lifelong condition and, like dyslexia, might affect participation and functioning of everyday life skills in education, work and employment [11]. Dyspraxia manifests itself in problems in adequately registering, interpreting, organizing and integrating sensory information to produce an efficient response. Children with dyspraxia tend to bump into things and to have trouble with sports. Dyslexic and dyspraxic individuals share common features such as the marked discrepancy between intelligence and academic achievement, the fact that both dyslexia and dyspraxia are probably hereditary, the difference in cognitive style affecting learning, organization and memory, frequent histories of frustration and failure especially at school.

Auditory processing disorder (APD) is a neurological defect that affects how the brain processes spoken language. This makes it difficult for the child to process verbal instructions or even filter background noise in the classroom [12]. It affects almost 5% of school-age children. Children with APD are often distracted by background noise, or may not hear clearly when background noise is present; they may find it difficult to follow spoken instructions and often misinterpret what is said; they have mishearing problems, problems following directions, remembering what they hear, attending to oral messages[12]. Some research indicates that auditory processing skills could be the primary shortfall in dyslexia [13]. It has been suggested that auditory processing deficits adversely affect one's ability to detect and process speech patterns. This results in impaired phonological representations, specifically required for speech perception, which are likely to lead to impaired phonological awareness which in turn may result in the development of reading disorders. To be a successful reader one must have adequate knowledge of, and fast access to the speech sounds (phonemes) corresponding with the letter combinations (graphemes) being read.

DYSLEXIA ON THE BASIS OF AGE AND GENDER

The existence of dyslexia manifests itself in different ways on the basis of age with regard to language, reading, speaking, writing, social-emotional and other skills. For each of the aforementioned parameters there are common manifestations regardless of age [14], mentioned below. The four age groups described are pre-kindergarten to 2nd grade children, 3rd grade to 8th

grade children, teens, and adults. In the group of adults college students are included. Language, reading and writing signs of dyslexia concern mainly dyslexics' phonological processing, that is, the ability to initially recognize the letters that make up a word, then use them to identify the phonemes, and put them together to make sense of the word. Social-emotional signs of dyslexia concern dyslexics' poor learning performance, boredom and discouragement.

The first two age groups (pre-kindergarten to 2nd grade, 3rd grade to 8th grade) share common language difficulties concerning naming people and objects, pronouncing words correctly and rhyming words [15]. Also, in these first two categories and in teens dyslexia is manifested by difficulties in deviating from the topic of conversation. Dyslexics from 3rd grade to 8th grade and teens show difficulties speaking smoothly, fluently, accurately, not haltingly and without many filler words [14]. Dyslexics from 3rd grade to 8th grade, teens and adults have difficulties learning a foreign language [14],[16], distinguishing between words that look or sound alike, understanding humor commonly expressed by non-literal language. Finally, all age groups have problems in understanding verbal instructions or directions [14].

There are also common reading difficulties among dyslexic age groups. Dyslexics of all age groups do not like reading books and may lose their place when reading, often skipping words [17], a fact which might impair comprehension. There is a deficit manifested mainly during the two first age groups, which concerns remembering new vocabulary and printed words [14]. Also, there may be problems in almost all age groups connected with word analysis to figure out unfamiliar words. Also, mostly dyslexics from 3rd grade to 8th grade and teens seem to take a lot of time to complete reading assignments and spend a lot of time re-reading passages[18].

Moreover, speaking difficulties among dyslexic age groups exist. Dyslexics of all ages speak hesitantly, with pauses [16]. Also, they search for a specific word and end up using vague language, that is, words such as "thing" [16], without naming the object. Also, they confuse words that sound alike and mispronounce long, unfamiliar or complicated words[16].

Additionally, common writing difficulties are manifested among dyslexics. The first two age groups have difficulty writing letters, numbers, and symbols in the correct order. Dyslexics of all ages have difficulties spelling words correctly and consistently, proofreading and correcting work [14], as well as messy handwriting [16],[19]. Dyslexics ranging from school age to adults may find it difficult to express ideas in writing in a logical and organized way [20].

Concerning the social and emotional problems accompanying dyslexia, the majority of dyslexic preschoolers are happy and well adjusted. Their emotional problems begin to develop when early reading instruction does not match their learning style [21]. Dyslexics of the first two age groups may have problems in interpreting non-verbal communication such as body language and tone of voice [14]. Teen and adult dyslexics may have problems with understanding other people's moods and feelings, understanding and responding appropriately to teasing, or with having a realistic knowledge of their social strengths and weaknesses [14]. Dyslexics of 3rd grade to 8th grade, teens and adults share feelings of anxiety, frustration or withdrawal [19],[22],[23]. Also, dyslexics of all ages have low self-esteem, which may not be immediately visible [16], [19]. Finally, dyslexics ranging from 3rd grade to adults have difficulty dealing with peer pressure and embarrassment [14], [20].

Other difficulties among dyslexics of all ages concern mainly the sense of direction and spatial concepts [14]. Also, their performance varies from day to day [19]. Dyslexics ranging from the 3rd grade to adults may also find it difficult to apply skills learned in one situation to another situation [14]. Dyslexics varying from the 3rd grade to teens may encounter difficulties learning new games and mastering puzzles [14]. Dyslexics ranging from pre-kindergarten to teens have trouble finishing tests on time [16]. Similarly, adult dyslexics may lose track of time or find it difficult to estimate how long a task will take to complete [19].

Dyslexia is at least twice as common among males as it is among females, thus previous neuroanatomy studies have focused heavily on dyslexic males [24]. It is generally agreed that more boys than girls are affected by dyslexia [1]. Sex differences are apparent in that males are

disproportionately represented in reading-disabled populations [10]. However, existing male-based brain models of dyslexia may not apply to dyslexic females. Among males, the results were consistent with previous studies: dyslexics had less gray matter volume in brain areas like the left temporal gyrus, which is involved in language, than their non-dyslexic counterparts [24]. Among females, dyslexics had less gray matter volume in areas like the right parietal lobe, which is involved in sensory and motor processing than their non-dyslexic counterparts. The researchers were surprised to find that, unlike males, there were no differences in the temporal lobe of dyslexic females [24].

DYSLEXIA ACROSS LANGUAGES WITH DIFFERENT ORTHOGRAPHIES

Given that research about dyslexia concerns primarily the English language, it is of great importance to know whether dyslexia is the same across different languages [25]. Neuroimaging studies suggest a universal neurocognitive basis for dyslexia and that differences in reading performance among dyslexics of different countries are due to different orthographies [26], claiming that phonological deficits are very similar for dyslexics in different languages. Contrastively, behavioral studies suggest that the nature and prevalence of dyslexia may differ between the written form of different languages but that there are differences in the severity of written language impairments, due to differences in orthographic consistency [27]. While the initial signs of dyslexia may present differently in different orthographies, the underlying neurological underpinnings are the same, regardless of language.

Alphabetic orthographies use letters and letter clusters to represent phonemes, whereas logographic ones use characters to represent monosyllabic morphemes of the spoken language [28]. In alphabetic orthographies the orthographic depth of a language indicates the degree to which a written language deviates from simple one-to-one grapheme-phoneme correspondence. Dyslexics find languages with transparent phoneme-grapheme correspondence easier than languages with arbitrary phonemic orthography. A language whose writing system has graphemes mapping almost one-to-one onto phonemes is called a transparent writing system (e.g. Spanish, Italian), while a writing system where graphemes have many phonetic interpretations or phonemes have many graphemic interpretations is called an arbitrary (opaque) writing system (e.g. French, English). Dyslexia is an issue of phonemic awareness and converting graphemes to phonemes, so languages with transparent writing systems are the ones whose speakers have relatively low rates of dyslexia because it is easier to convert graphemes to phonemes when there is an almost one-to-one correspondence [29]. An accumulating number of studies suggest that learning to read English is harder than learning to read other European orthographies such as Italian, Spanish, German or Greek [25] because English has a more inconsistent mapping between grapheme and phoneme and consequently a more arbitrary phonemic orthography concerning spelling patterns on syllables, morphemes and letter-sound correspondence. In relevant studies, Italian, English, and French dyslexics performed equally poorly in phonological tasks, but the Italian dyslexics performed better in reading comprehension tasks than did the speakers of languages with opaque (arbitrary) writing systems, showing that while the condition of dyslexia is the same in these three languages, it is more clearly manifested in languages with opaque orthographies [30].

Most of this discussion of dyslexia so far has been focused on languages with alphabetic writing systems, but there are many languages in the world with logographic writing systems, such as Chinese. There is not enough research to give a conclusive answer as to whether dyslexia is a different condition between languages with alphabetic orthographies and languages with logographic orthographies. Since readers of Chinese do not perform a lot of conversion from

graphemes to phonemes because their writing system is non-alphabetic, dyslexia in Chinese is somewhat related to phonological problems, but is more an issue of low levels of activation in the left middle frontal gyrus, where visuospatial and verbal working memory is coordinated [31]. Chinese readers have issues processing the characters before even dealing with phonological processing. Dyslexia in Chinese may also be related to handwriting skills because to learn and memorize characters, Chinese children copy the characters out many times over in school [31].

CONCLUSIONS

Dyslexia is a learning disability with that has been proven to occur across the IQ spectrum and is characterized by poor word decoding, which in turn influences performance in spelling and the development of reading fluency.

There are conclusions to be drawn as to other learning disabilities accompanying dyslexia. Both individuals diagnosed with dyslexia and individuals diagnosed with ADHD present the symptom of “lack of focus” and similar psychological and study consequences (such as disruptive behavior to avoid scheduled schoolwork) due to these disabilities. Dyslexia is connected with dysgraphia due to the non-fluent and unconscious association of phonemes to graphemes. Dysgraphic individuals find it difficult to retrieve the visual image of words required for spelling, thus dysgraphia is connected with the lack of visual and verbal memory of dyslexics. Dyslexic dysgraphia is a disability combining features of dyslexia and dysgraphia. Moreover, dyslexia and dyspraxia are connected with a difficulty in processing sensory information. Dyspraxic and dyslexic individuals are both characterized by common features such as the discrepancy between one’s intelligence level and academic achievement. Both dyslexia and dyspraxia are probably attributed to heredity, are connected with stories of frustration and low academic performance and with differences in cognitive style influencing memorizing, language, organisation. Finally, auditory processing disorder could be the primary shortfall in dyslexia, because it leads to impaired phonological representations.

Regarding dyslexia and age, dyslexics of all ages share difficulties which have been classified as language, reading, writing, social – emotional and other types of difficulties. For each and every of the aforementioned categories, some difficulties accompanying dyslexia are common among all age groups, others are common among some age groups.

Concerning dyslexia and gender, various research findings indicate that generally males show a higher incidence of dyslexia than females. Brain analysis differences between dyslexic and non-dyslexic males are not similar to brain analysis differences between dyslexic and non-dyslexic females. In addition, it appears likely that there are many females whose dyslexia has not still been adequately recognised because male dyslexic students are more extroverted in expressing their frustration with dyslexia [32] than their female counterparts.

There are some differences in the way dyslexia manifests itself across different languages. With regard to languages with alphabetic orthographies, dyslexics find languages with transparent phoneme-grapheme correspondence easier than those with arbitrary phonemic orthography. The issue arising from the comparison of dyslexia between languages with alphabetic orthographies and languages with logographic orthographies is if dyslexia is a different condition in each case. Not enough research has been done yet to give a confident answer to this interesting issue.

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Defence Expenditure in Greece: Imports Against a Sound Defence Industrial Base

George A. Zombanakis

*Department of Humanitarian Sciences, Hellenic Military Academy and
Department of Economics, The American College of Greece.*

Abstract. This paper aims at exploring the possibilities that spending on defence equipment may contribute to the economic growth of Greece during a period in which a series of austerity measures have been imposed following the on-going economic crisis. The conclusion drawn is that as long as expenditure on defence equipment to its overwhelming percentage reflects import payments it can, by no means contribute to the growth of the Greek economy. This is a finding pointing the way to implementing import-substituting policies on the issue of defence procurement, to the best possible extent, aiming at both restricting import payments and contributing to reviving the economic activity in the framework of the present adverse economic and geopolitical environment.

Keywords: Growth, Defence Spending, Import Substitution

JEL codes: F45 H56 H60

INTRODUCTION

This paper aims at assessing the extent to which defence spending can contribute to the growth of the Greek economy in an environment outlined by repeated austerity measures which have led to a severe recession and the loss of about 25% of the pre-crisis country's GDP. The European Central Bank (ECB), the International Monetary Fund (IMF), and the European Commission (the three known as "Troika" which has recently turned to a "Quartet" with the addition of the European Stability Mechanism, ESM), do not seem to share Greece's geopolitical concerns over the Turkish expansive ambitions and the management of the energy resources in the area while suggesting closing down almost all defence industries in the country given the long history of losses of some of these firms. Such policy recommendations, however, lead to the minimization of the contribution of the Hellenic Defence Industrial Base (DIB) to the procurement programmes of the Hellenic Armed Forces (EMPAE), which is already more or less negligible, measured in one-digit percentage figures of the total value of these programmes. The environment outlined above suggests that the economy is doomed to rely more and more on importing expensive defence equipment to support the EMPAE requirements in an arms-race environment against Turkey.

Under the circumstances it would be interesting to consider the extent to which this environment would compromise between austerity and national security¹ while in parallel contributing to the country's economic growth by aiming at collecting the so-called "peace dividend" i. e. the possible benefits reaped by closing down most domestic DIB firms following the Troika policy suggestions and shifting resources from defence to non-defence production. Alternatively, however, one would propose embarking in an import-substitution policy concerning the production of selected defence equipment items of the Hellenic Armed Forces. To assess the validity of such policies and following a brief literature review (Section II) together with some points of interest concerning the Greek defence industry (Section III), the paper describes the technical approach used for considering such policy options (Section IV). The next part of the paper (Section V) deals with the description and assessment of the results before conclusions can be drawn in Section VI.

II. LITERATURE REVIEW

Since the publication of the so-called "Benoit hypothesis" that resorting to military expenditure can have a positive direct effect on growth (Benoit, 1978), there has been a large number of contributions in the literature referring to the peace dividend issue, that is the question that faces the possibility of reaping economic benefits when shifting resources from defence to non-defence production. Leading contributions to the issue can be considered those by Intriligator (1996) and Hartley (1997), with the former regarding the peace dividend as an investment activity the short – term costs of which during the conversion process are eventually followed by long – run benefits in the form of increase rate of growth and employment. Hartley, on the other hand, points to the fact that a thorough study of the peace dividend question requires a reliable and comprehensive data base on a variety of variables like labour market conditions, transferability of skills and arms imports and exports. This necessarily implies that case studies are more useful under these circumstances compared to sophisticated econometric models, a point that appears to be in direct confrontation with Adams and Park (1996) who attribute the variety of views expressed in the literature on the peace dividend issue to techniques of analysis reasons. In addition to these, Hartley enriches the list of the two misconceptions or myths on the peace dividend issue mentioned by Intriligator to include the problem of resources adaptability as well as political and social considerations. Additional geopolitical, strategic and social criteria are mentioned by Dunne et al. (2005), who emphasise on geopolitical rather than economics variables and concluding that the impact of defence expenditure on growth is affected by the threat facing the economy of each country. In addition, Davoodi et al. (2001) find that the easing of international and regional tensions together with the help of IMF – supported adjustment programs lead to both decreased defence expenditure and higher non-defence government outlays while Chan and Sommer (1996) underline the role of social institutions and political cultures in reallocating the benefits derived following a defence expenditure cutback. Finally, in a rather original approach, Cowton (1993) introduces a moral dimension in the peace-dividend literature examining the relative importance of military contracting as one area of possible concern to 'ethical' or 'socially responsible' investors.

Turning to panel-data contributions Knight et al. (1996) consider a generalized view on the extent and the way in which changes in national defence burdens affect the economic growth while Heo (1998) has employed an 80-country non-linear defence – growth model which reveals that the majority of the countries in the sample should expect to earn a peace dividend following

¹ National security is a public good with its assessment relying on the hypothesis that it can be considered as being a monotonic function of defence expenditure, an assumption which has been repeatedly questioned (e. g. Sandler and Hartley, 1995).

their defence expenditure reduction. Mintz and Stevenson (1995) consider the issue via a diametrically opposite perspective, using a sample of 103 countries to show that military spending brings about a positive effect on growth in just 10% of the cases examined. While Okamura (1996) considers the peace dividend issue through the theory of Alliances in order to underline the US benefits following the NATO disarmament treaty.

Turning to the issue on an individual-country basis one can focus on the cases of Greece and Turkey, two traditional arms race rivals (Andreou and Zombanakis, 2000 and 2011). Thus while the literature seems to converge on a positive effect of defence spending on Turkey's economic growth (Sezgin 2001), Yildirim and Sezgin (2002), it concludes, in addition, that the possibility of earning a substantial peace dividend is distinct once resources are directed to non-military investment activities (Ozmukur, 1996). To assess the importance of these findings, however, one must take into consideration the fact that the Turkish defence industry is prospering supplying a substantial percentage of the country's required defence material. In the case of Greece, on the other hand, in which the findings on the defence-spending to growth relationship being rather contradicting (e. g. Kollias, 1995, Stavrinou and Zombanakis, 1998, Antonakis, 1996 and 1997), there are no visible prospects for a peace dividend (Balfousias and Stavrinou, 1996). The approach followed by Andreou et al. (2002) which approximates the peace dividend as any defence expenditure over and above the calculated optimal level converted to a non-military equivalent may provide a plausible assessment. Such conclusions must be weighted together with the fact that the bulk of the armed forces equipment procurement requirements is imported which accounts for the findings by Sezgin (2003) according to whom equipment defence spending entails adverse repercussions on the economic growth of Greece. This conclusion that distinguishes between defence equipment procurement and the overall defence budget shall be examined in detail in this paper.

III. THE HELLENIC DIB

It has already been pointed in the literature (Brauer 2003, Zombanakis 2009) that the Hellenic DIB supports only a negligible percentage of the Hellenic Armed Forces equipment requirements (a one-digit percentage figure in most cases), thus failing to contribute to the country's economic growth. The situation seems to have deteriorated since the beginning of the economic crisis, with the reduction of the resources allocated to defence projects, the absence of specialized technical and administrative personnel, as well as the restrictions imposed on the use of patents and the technical production documents (TPD) owned by the original equipment manufacturers (OEM).

This environment is certainly inadequate to contribute to the maintenance and support of the Hellenic Armed Forces equipment¹. As a direct consequence, the relevant NATO Support and Procurement Agency (NSPA) return industrial index for Greece has never exceeded 0.4 during the last few years.²

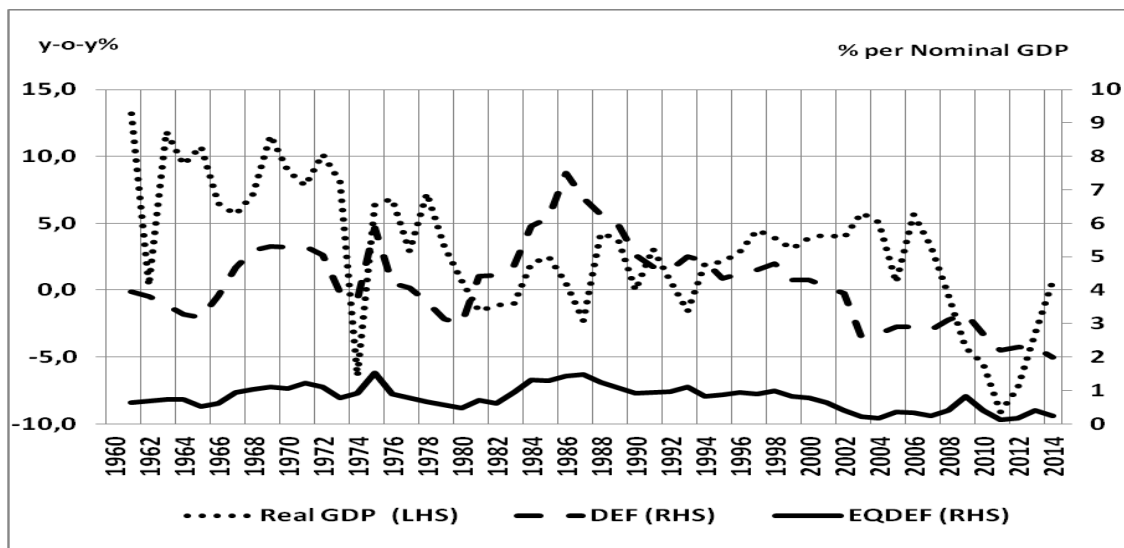
¹ A notable exception in this environment of inadequacy seems to be the Hellenic Aerospace Industry (HAI) which supports the depot – level maintenance (DLM) of the entire fleet of flying NATO Radar. The recent history of the HAI cooperation with NATO involves a total of 279 maintenance and 750 units of engines components.

² The industrial return position of each NSPO member nation is determined using the ratio between the value of contracts placed in the country and the value of sales made to the country. Depending on their ratio, countries fall into one of the following categories: - well placed; - less-well placed; - poorly placed. For example during 2011 Greece has placed with the NATO Maintenance and Supply Agency (NAMSA) contracts amounting to a total of €36 mil. against just €4 mil. contracts offered, this leading to an index of 0.1. The corresponding figure for most of the other NATO members exceeds 1.

But the main cause of the inadequacy of the domestic DIB to contribute to the country's economic growth is the profound involvement of the Greek inefficient public sector in the defence industry of the country, a fact that leads to corruption, public - spending wasting and eventually, considerable delays in basic equipment deliveries (Andreou et al. 2013). This environment has led to the minimization of the contribution of the domestic defence industrial base to the procurement programmes which inevitably compel the Hellenic Armed Forces to resort to extensive expenditure on imports of equipment that can guarantee their readiness. In addition, there have been numerous cases in the past, in which resources diverted to non-defence activities aiming at earning a peace dividend have eventually been wasted rather than channeled to production (Kyriazis and Somakos 1999).

IV. DATA AND ECONOMETRIC METHODOLOGY

The sample period used ranges from 1975 to 2014 starting after the Cyprus crisis when the Hellenic Armed Forces turned to purchasing mostly newly - built equipment preferably from Germany and France rather than profiting from the second - hand US FMS credits. The model denotes defence equipment purchases using the variable **eqdef** as opposed to **def** which represents the total defence expenditure item of the budget allocated to the Ministry of Defence. Comparing the performance of these two the analysis aims at showing the bias introduced using the latter its major part includes personnel remuneration items, the cost of the Hellenic Armed Forces participation with NATO and other international peace-keeping forces and piracy-protection requirements. Under these circumstances, the GDP percentage of the Greek aggregate defence expenditure is clearly overestimated, given that according to the SIPRI, data spending on defence equipment procurement hardly reaches about one quarter of the corresponding total. Figure 1 highlights the difference in the behaviour of the variables concerned.



Source: AMECO Eurostat, SIPRI and IISS.

FIGURE 1: Real GDP and Defence Expenditure Developments.

Bearing these in mind the model uses the following four variables:

- **rgdp** denotes the annual growth rate of real gross domestic product as provided by the Hellenic Statistical Authority (ELSTAT) and AMECO.
- **def** is the ratio of military expenditure to nominal gross domestic product.
- **eqdef** is the ratio of expenditure on military equipment to nominal gross domestic product. The sources of both these variables are the SIPRI and the IISS annual reports.
- **ndef** is the ratio of non-military expenditure to nominal gross domestic product. In this case I have followed Malizard (2013) to determining non-defence expenditure as the difference between the Budget data of total public (government) spending, including defence, and the data of defence expenditure¹.

Turning to the econometric methodology used, this includes the following steps:

First, it examines the rank of integration for the series of *rgdp*, *def*, *eqdef* and *ndef* using the DF-GLS² (Elliot, 1996) and Phillips-Perron³ (PP) unit root tests.

Second, it considers all variables as being endogenous and investigate the existence of a cointegration relationship among them using the Johansen's cointegration technique (1988, 1991, and 1992). For this purpose an unrestricted vector autoregressive model (VAR) is estimated using the maximum likelihood estimation method.

Third, in case that a cointegration relationship exists, it will follow a vector error correction model (VECM) analytical framework in order to capture the short-term dynamics of the variables in the system. If this is not the case one must resort to an unrestricted VAR model, arguing, following Malizard (2013), that among all the estimation methods, a VAR model is the most suitable econometric technique for our purposes given that a. It helps overcoming problems of endogeneity and multi-collinearity among variables, b. It reveals the direction of Granger⁴ causality among variables and c. It provides impulse response functions⁵ and a variance decomposition analysis of the system.

¹ The shares of defence spending in these sources are offered in nominal rather than in real terms. In fact, opting for the latter would involve an impossible task because the methodology required would involve deflating the nominal values by the prices of defence goods and services which, however, vary considerably on a case-by case basis depending on the purchase agreement signed; the military offsets provided et c.

² Elliot et al. (1996) proposed a simple modification of the ADF tests in which the data are detrended so that explanatory variables are "taken out" of the data prior to running the test regression.

³ Phillips and Perron (1988) propose an alternative (nonparametric) method of controlling for serial correlation when testing for a unit root. The PP method estimates the non-augmented DF test equation, and modifies the t-ratio so that serial correlation does not affect the asymptotic distribution of the test statistic.

⁴ Granger causality examines the forecasting relation between two variables. It was proposed by Granger (1969) and popularized by Sims (1972). Testing causality, in the Granger sense, involves using F-tests to test whether lagged information on a variable Y provides any statistically significant information about a variable X in the presence of lagged X. If not, then "Y does not Granger-cause X."

⁵ The VAR model is commonly used for analyzing the dynamic impact of random disturbances on the system of variables.

V. EMPIRICAL RESULTS

The hypothesis of a unit root in the levels of the series cannot be rejected (see Table 1). By contrast, the hypothesis of a unit root in the first differences is rejected in all cases in favour of the alternative of stationarity. These results suggest that all series are $I(1)$.

TABLE 1: DF-GLS and PP Unit-Root Tests.

DF-GLS Statistics	(rg dp)	Δ (rg dp)	(def)	Δ (def)	(eq def)	Δ (eqd ef)	(nd ef)	Δ (nd ef)
Intercept	-	-	-	-	-	-	-	-
<i>Lags</i>	1.947	3.159**	1.575	7.281**	2.043	7.333**	0.765	5.015**
<i>Lags</i>	1	0	0	0	0	0	0	0
Trend and Intercept	-	-	-	-	-	-	-	-
<i>Lags</i>	3.18	4.427**	1.931	7.437**	2.474	7.441**	2.454	4.953**
<i>Lags</i>	1	0	0	0	0	0	0	0
PP Statistics	(rg dp)	Δ (rg dp)	(def)	Δ (def)	(eq def)	Δ (eqd ef)	(nd ef)	Δ (nd ef)
Intercept	-	-	-	-	-	-	-	-
<i>Bandwidth</i>	1.786	3.290**	1.638	7.290**	2.098	7.389**	0.002	5.104**
<i>Bandwidth</i>	4	3	3	1	1	4	3	3
Trend and Intercept	-	-	-	-	-	-	-	-
<i>Bandwidth</i>	1.186	3.457**	2.014	7.362**	2.713	7.507**	1.829	5.088**
<i>Bandwidth</i>	4	3	2	0	0	5	3	3
None	-	-	-	-	-	-	-	-
<i>Bandwidth</i>	0.860	3.033**	0.802	7.340**	0.938	7.459**	2.031	4.690**
<i>Bandwidth</i>	5	3	1	1	3	4	3	4

** Denotes rejection of the null hypothesis for the 5% significance. Critical values being provided by MacKinnon (1996). The selected lag length for no serial correlation of the DF-GLS residuals based on Swartz Information Criterion. Newey-West algorithm selects automatic Bandwidth for PP using Bartlett kernel.

The results of the Johansen's cointegration technique provide clear evidence of no cointegration between the endogenous variables of the system. In fact, cointegration rank test of trace statistic and maximum eigenvalue statistic indicate no cointegration at the level 5% (see Table 2) which means, as earlier stated, that the use of a vector error correction model (VECM) analytical framework is not recommended.

TABLE 2. Cointegration Results

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None	0.484939	62.20274	63.87610	0.0686
At most 1	0.389368	35.66391	42.91525	0.2188
At most 2	0.232475	15.93350	25.87211	0.4979
At most 3	0.125195	5.350152	12.51798	0.5469

Trace test indicates no cointegration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.484939	26.53883	32.11832	0.2061
At most 1	0.389368	19.73041	25.82321	0.2589
At most 2	0.232475	10.58335	19.38704	0.5567
At most 3	0.125195	5.350152	12.51798	0.5469

Max-eigenvalue test indicates no cointegration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Having verified that the variables are not cointegrated, the analysis can be based on an unrestricted vector autoregressive model (VAR) model. The unrestricted VAR (p) model consists of four equations and its specification takes the following form:

$$gdp_t = c_1 + \sum_{i=1}^p a_i gdp_{t-i} + \sum_{i=1}^p \beta_i def_{t-i} + \sum_{i=1}^p \gamma_i ndef_{t-i} + e_{1t} \quad (1)$$

$$eqdef_t = c_2 + \sum_{i=1}^p \delta_i eqdef_{t-i} + \sum_{i=1}^p n_i gdp_{t-i} + \sum_{i=1}^p \theta_i ndef_{t-i} + e_{2t} \quad (2)$$

$$def_t = c_2 + \sum_{i=1}^p \delta_i def_{t-i} + \sum_{i=1}^p n_i gdp_{t-i} + \sum_{i=1}^p \theta_i ndef_{t-i} + e_{3t} \quad (3)$$

$$ndef_t = c_3 + \sum_{i=1}^p \varphi_i gdp_{t-i} + \sum_{i=1}^p \zeta_i def_{t-i} + \sum_{i=1}^p \omega_i ndef_{t-i} + e_{4t} \quad (4)$$

where p refers to the lag length and e_{1t} , e_{2t} , e_{3t} and e_{4t} to the errors terms. In the context of this representation, one can also check for causality using the Granger causality test. Knowing that

the estimation of VAR¹ models is “sensitive” to the number of time lags (Banerjee et.al., 1993) using the information criteria² LR, AIC, and HQ, and Sim’s Test indicates that the optimal number of lags included in the VAR is k=3 (see Table 3). All variables of the system are stationary in their first differences in order to avoid a spurious estimation.

TABLE 3. Lag Order Selection Criteria

VAR Lag Order Selection Criteria
Exogenous variables: C
Sample: 1975 2014
Included observations: 40

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-294.7772	NA	36.13969	14.93886	15.10775	14.99992
1	-223.6922	124.3986	2.312575	12.18461	13.02905	12.48993
2	-204.8654	29.18154	2.060804	12.04327	13.56326	12.59285
3	-185.1821	26.57257*	1.832012*	11.85910*	14.05465*	12.65294*
4	-175.4006	11.24865	2.854084	12.17003	15.04113	13.20813
5	-157.7575	16.76100	3.327112	12.08787	15.63452	13.37023

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

The system equations reveal good fitness while the system passes all diagnostic χ^2 tests successfully concerning the hypotheses of no serial correlation, of a residual - normal distribution (see Table 4), of absence of Heteroscedasticity and autoregressive conditional Heteroscedasticity. All equations of the VAR indicate that the residuals are Gaussian as the Johansen method presupposes.

¹ The VAR approach sidesteps the need for structural modeling by treating every endogenous variable in the system as a function of the lagged values of all its endogenous variables. Since only lagged values of the endogenous variables appear on the right-hand side of the equations, simultaneity is not an issue and OLS yields consistent estimates. Even though the innovations may be contemporaneously correlated, OLS is efficient and equivalent to GLS since all equations have identical regressors (Pesaran et al., 1998).

² Sequential modified LR test statistic (each test at 5% level) [Sims’ Test]. AIC: Akaike (1973) information criterion, Schwarz (1978) information criterion, HQ: Hannan-Quinn (1979) information criterion (1978).

*Indicates the appropriate lag length.

TABLE 4 . Normality Test of VAR (3)

VAR Residual Normality Tests
 Orthogonalization: Cholesky (Lutkepohl)
 Null Hypothesis: residuals are multivariate normal
 Sample: 1975 2014
 Included observations: 40

Component	Skewness	Chi-sq	df	Prob.
1	-0.150382	0.150765	1	0.6978
2	0.408216	1.110936	1	0.2919
3	-0.072902	0.035431	1	0.8507
4	0.015109	0.001522	1	0.9689
Joint		1.298654	4	0.8616

The VAR stability test shows that no root lies outside the unit circle and the VAR (3) satisfies the stability condition (see Table 5).

TABLE 5. Stability Test: Roots Of Characteristic Polynomial

Roots of Characteristic Polynomial
 Lag specification: 1 3

Root	Modulus
	0.941
0.764236 - 0.549033i	0.941
0.764236 + 0.549033i	0.941
	0.831
0.804237 - 0.210150i	0.831
0.804237 + 0.210150i	0.831
	0.766
-0.471940 - 0.604255i	0.766
-0.471940 + 0.604255i	0.766
	0.700
-0.308042 - 0.628608i	0.700
-0.308042 + 0.628608i	0.700
	0.656
0.020987 - 0.656499i	0.656
0.020987 + 0.656499i	0.656
	0.615
-0.498841 - 0.359930i	0.615
-0.498841 + 0.359930i	0.615

No root lies outside the unit circle.
 VAR satisfies the stability condition.

After ensuring on the basis of Table 5 that the stability condition is satisfied, one must investigate the potential bidirectional causality among variables. According to Granger (1988, 1995), it is argued that military expenditure does not cause growth if the following hypothesis cannot be rejected:

$$H_o : \beta_1 = \beta_2 = \dots = \beta_p = 0 \tag{5}$$

In addition it is also possible to check the hypothesis that growth does not affect military expenditure:

$$H_o : n_1 = n_2 = \dots = n_p = 0 \tag{6}$$

The results of the Granger causality test are presented in Table 6.

TABLE 6. Granger Causality Tests

Pairwise Granger Causality Tests
 Date: 12/28/15 Time: 23:38
 Sample: 1975 2014
 Lags: 3

Null Hypothesis:	Obs	F-Statistic	Prob.
DEQDEF does not Granger Cause DRGDP	40	0.85883	0.4721
DRGDP does not Granger Cause DEQDEF		0.29950	0.8255
DDEF does not Granger Cause DRGDP	40	0.10433	0.9570
DRGDP does not Granger Cause DDEF		3.28493	0.0328
DNDEF does not Granger Cause DRGDP	40	5.71880	0.0029
DRGDP does not Granger Cause DNDEF		6.94721	0.0009

* Denotes rejection of the null hypothesis for the 5% significance.

According to the Granger causality – test results depicted in Table 6 defence spending is not related in any form of causality with the GDP growth of Greece. By contrast all forms of public spending incorporated in the non-defence expenditure variable appear to affect the growth of the economy in a Granger-causality form, the inverse, however, not being the case. This finding has been more or less expected given the particularly pronounced role of the public sector on the functions of the economy.

However, the paper moves a step further by exploring the impact of one variable on another using impulse response functions (IRF) and variance decomposition techniques (VD). It is well known that with respect to VAR specification a shock on the error terms affects the entire system through the dynamics of the VAR process and the innovations are also correlated. IRF maps out the dynamic response path of one variable to another, due to a one-period standard deviation shock. Thus, the paper employs the method of generalized impulses proposed by Pesaran and Shin (1998) based on which IRF's are invariant to the variable's ordering¹. In fact, according to

¹ IRF's based on the Choleski decomposition method may be widely used in the literature, it is, however, very sensitive to the variables' ordering, to such an extent that two different ordering choices can lead to

Figure 2 and Table 7, the role of defence expenditure on the GDP growth is negative throughout the simulation period under consideration, tending to a zero impact towards its end. This negative impact on the GDP growth is shown to be considerably more pronounced at the case of spending on defence equipment procurement (compared to the total defence expenditure variable), given that the overwhelming majority of the defence equipment used is imported, thus exerting a negative effect on the GDP. In it interesting to point out, however, that once the negative impact of non-defence spending is higher in absolute terms, one may argue against the possibility of reaping any form of a peace dividend, even in the loss-minimizing sense, as the adverse response of the GDP growth to non-military spending is much higher compared to that due to any form of defence expenditure.

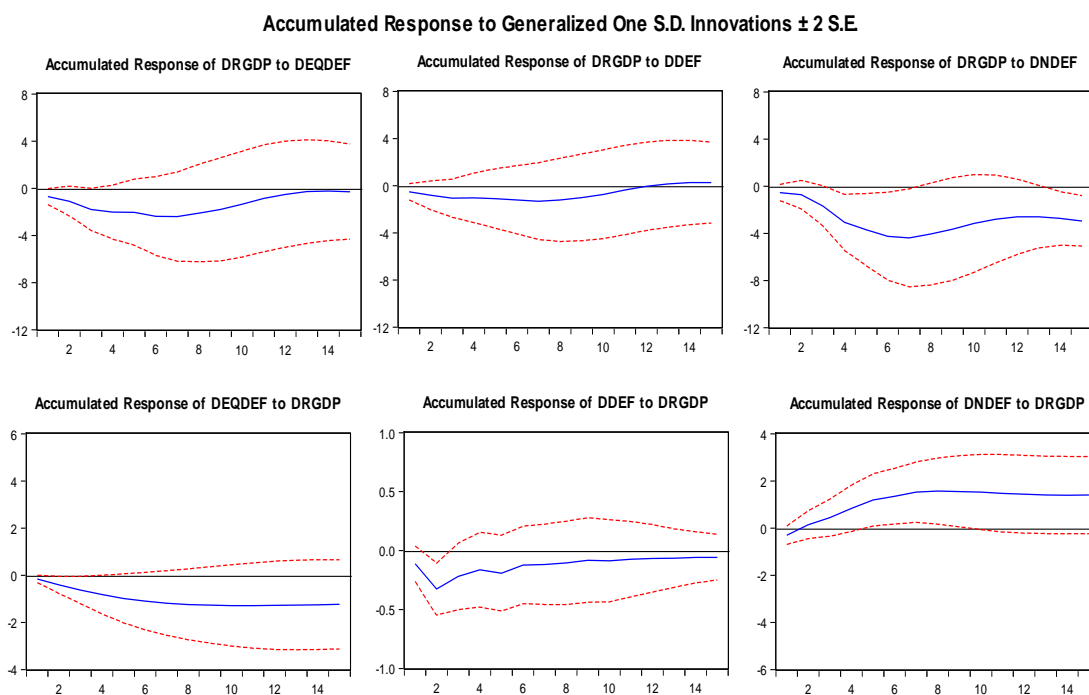


FIGURE 2. Accumulated Impulse Response (IRF's) of Real GDP Growth

This finding which is summarized in Figure 3 points to one of the main issues of this paper, namely the fact that conclusions of the defence expenditure policy of Greece, especially for the short - and medium run horizon, can be more reliable if drawn on the basis of focusing on the defence - equipment spending rather than total defence expenditure, given that the major part of the latter includes wages and salaries of military and civilian personnel, as well as spending on NATO and other international organizations commitments and participation to peace-keeping forces, protection from piracy threats etc.

two different IRF's. By contrast, the Generalized Impulses method as described by Pesaran and Shin (1998) constructs an orthogonal set of innovations that does not depend on the VAR ordering. The generalized impulse responses from an innovation to the j -th variable are derived by applying a variable - specific Cholesky factor computed with the j -th variable at the top of the Cholesky ordering.

TABLE 7. Accumulated Impulse Response of Real GDP Growth

Pe riod	DRGDP	DEQDEF	DDEF	DNDEF
1	2.214728	0.009635	-0.011510	-0.381565
2	2.936468	-0.298003	-0.382724	-0.933819
3	2.987051	-1.383732	-0.583863	-2.695834
4	3.261899	-2.102784	-0.938122	-4.025782
5	2.682737	-2.689914	-1.648809	-4.357256
6	2.049124	-3.599985	-2.254275	-4.746558
7	1.600154	-3.943977	-2.711842	-4.580240
8	1.200169	-3.617473	-2.698934	-3.820554
9	1.260313	-3.089252	-2.345316	-3.063499
10	1.578598	-2.342747	-1.873735	-2.427026
11	1.930023	-1.620141	-1.255051	-2.123014
12	2.296199	-1.192372	-0.775039	-2.186803
13	2.458520	-1.060815	-0.583793	-2.478518
14	2.372453	-1.236968	-0.612267	-2.890430
15	2.129269	-1.597225	-0.849134	-3.214321

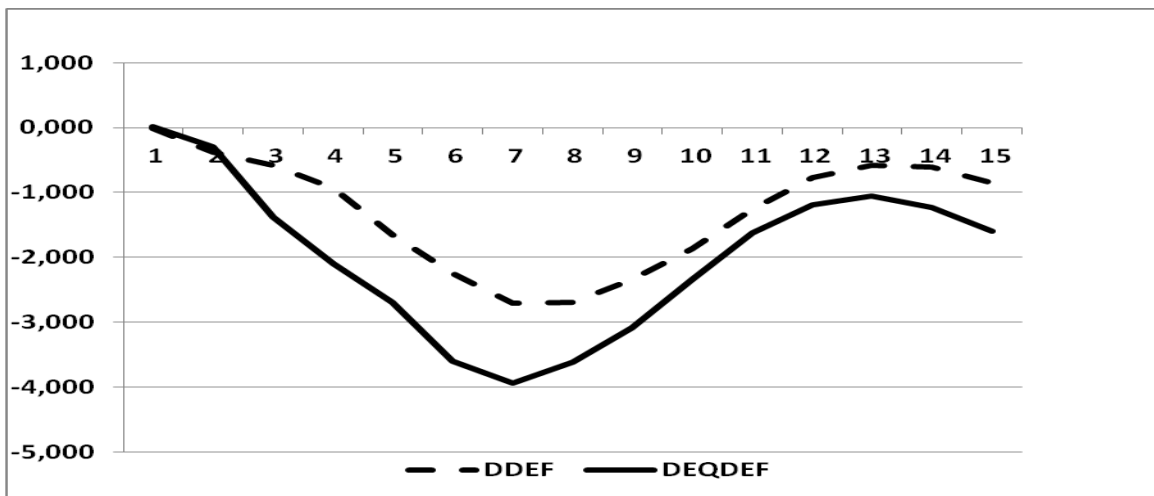


FIGURE 3. IRF's Accumulated Response of D(NGDP) from One Standard Deviation of (DEF) and D(EQDEF).

As regards the rest of the IRF findings, the notorious Greek public sector inefficiency seems to be behind the failure of the non-defence spending to exert a positive influence of the country's economic growth while, by contrast, the reverse case indicates a certain extent of influence of the GDP growth on the non-defence spending of the economy.¹ It seems, therefore, that while the

¹ It should be noted that even though the non-defence expenditures variable appears to affect the growth of the economy in a Granger-causality sense the IRF simulation results do not support this finding for the specific time period.

non-defence public sector does not contribute to economic growth it relies on it to support its functions in the economy with everything that such an imbalance might entail concerning efficiency issues. Finally, the extent to which the state will plan its defence - procurement policy is not affected by the growth of its economy, as the former is influenced to a larger extent by geopolitical issues and the long history of the Greek-Turkish arms race (Andreou and Zombanakis, 2011). This is a point which assumes particular interest in the context of the Greek economic crisis a period during which the procurement defence amounts to 0.3% of the GDP for both 2015 and 2016 while it has reached as low as 0.098% in 2012¹.

While impulse response functions trace the effects of a shock to one endogenous variable on to the other variables in the VAR, the variance decomposition (VD) separates the variation in an endogenous variable into the component shocks to the VAR. Thus, the variance decomposition provides information about the relative importance of each random innovation in affecting the variables in the VAR.

The results reported in Table 8 come to reinforce the conclusions earlier derived by pointing to the predominance of the expenditure on equipment, rather than the overall defence spending variable. In fact, Table 8 provides a comparison of the separate variance decomposition² for each endogenous variable. The columns give the percentage of the forecasted variance due to each innovation, with each row adding up to 100.

TABLE 8. Variance Decomposition of D(RGDP)

Period	S.E.	DRGDP	DEQDEF	DDEF	DNDEF
1	2.214728	100.0000	0.000000	0.000000	0.000000
2	2.394270	94.65155	1.684856	0.788368	2.875225
3	3.047754	58.44118	13.73581	6.363442	21.45957
4	3.337039	49.42630	16.11608	5.630903	28.82672
5	3.481763	48.16972	17.62346	6.702171	27.50465
6	3.658466	46.62844	22.11288	6.071876	25.18680
7	3.718235	46.59942	22.25390	6.572706	24.57397
8	3.808648	45.51618	21.95267	6.850430	25.68072
9	3.899481	43.44418	22.77499	6.535493	27.24534
10	4.010073	41.71096	24.98881	6.194399	27.10584
11	4.096494	40.70557	27.04405	6.119896	26.13049
12	4.144530	40.54805	27.47817	6.376770	25.59701
13	4.164018	40.32136	27.32032	6.431284	25.92704
14	4.187555	39.91161	27.19027	6.447597	26.45052
15	4.218225	39.66571	27.52146	6.354691	26.45814

¹ Concerning 2015 and 2016: Statement of the Minister of Finance, June 2015. The 2012 figure refers to a statement of the then Defence Minister in the Parliament. The pressure exercised on further defence cuts calls for an extra €200 decrease for 2016 which leaves the margin for equipment procurement to about €300 mil. Needless to point out that such a sum can hardly face a spare -part and ammunition procurement programme given that the average price of e. g. a torpedo used by the Hellenic Navy is about €600 thousand.

² The variance decomposition based on the Cholesky factor can change dramatically if you alter the ordering of the variables in the VAR. For example, the first period decomposition for the first variable in the VAR ordering is completely due to its own innovation.

It becomes obvious, therefore, based on these findings that both defence and non-defence public expenditure, each due to their own particular reasons, exercise a considerably adverse impact on the country's economic growth: The former consisting mainly of importables and the latter due to the low productivity and inefficiency of the public sector. It is interesting to see in this case that one cannot argue in favour of the possibility of a peace dividend accumulation, even in a loss-minimising sense, given that the absolute values of the defence-spending accumulated responses are always lower compared to those of non - defence expenditure. The VD analysis supplements this picture by providing a breakdown of the relative weights of defence as opposed to non-defence public spending when determining the growth rate variance of the economy. In any case the results reported in Table 8 indicate that only about 50% of the growth of the economy is due to the government expenditure, either defence or non-defence, despite the pronounced involvement of the public sector in the economy.

CONCLUSIONS

The conclusions drawn on the basis of the present paper must be given special attention in the context of the ongoing Greek economic crisis and the efforts undertaken by both the government and the Troika aiming at austerity policies without neglecting the issue of national security to the extent that this can be approximated by defence expenditure.

The first is that defence spending and more so, expenditure on defence equipment, under the present circumstances in which the bulk of the procurement represents import payments is not related in any form of Granger-causal relationship with the economic growth of Greece, This means that imports of defence equipment cannot be expected to add to the growth of the economy.

The second conclusion points to the fact that any shock exercised from the part of defence spending on growth in IRF terms assumes negative values throughout the period under consideration. These negative values are certainly more pronounced when the focus shifts on expenditure on defence equipment as its overwhelming percentage is imported leaving a very small fraction of defence equipment manufactured locally. By contrast, shocks exercised by the growth of the economy do not seem to determine developments regarding defence, and more so, equipment defence procurement programmes, the so-called EMPAE, as these are predominantly assessed by geopolitical factors.

The third is that there can be no possibility of earning a peace dividend by switching to non – defence rather than defence spending given the pronounced negative response of growth to public non-defence expenditure.

In terms of applied policy recipes one may be able to suggest the following: Once expenditure on defence procurement can hardly support growth given both the overwhelming predominance of the defence equipment import bill and the impossibility of reaping a peace dividend the paper recommends that the economy proceeds to import substitution to the extent, of course, that such equipment is deemed indispensable for the country's armed - forces needs.

Adhering to this proposal requires the following steps:

1. Restrict defence - equipment imports to the highest possible extent and proceed with importing material only in cases in which import substitution is not possible due to patents, technology transfer obstacles et c. This measure is expected to restrict public - spending wasting to a considerable degree as it is expected to minimize the role of the local agents and the related red-tape procedures involved.

2. Encourage investment in local defence firms, preferably private, as these are not menaced by the public-sector inefficiencies described above. However, to the extent that public sector firms can manage to become relieved from their past inefficiencies their contribution to the

national defence industrial base will also be more than welcome. A way to achieve such an investment may be the cooperation of the DIB with the Original Equipment Manufacturers (OEMs) via Follow On Support (FOS) contracts. Whatever the case may be, such a shift placing emphasis on the domestic defence industrial base represents the only case in which the economy is expected to reap a substantial peace dividend since in most cases the producing firms are able to extend their line of production to the direction of non-defence items as well. A typical example involves the case of one of the largest shipyards in the Mediterranean, which is not allowed to operate following a series of bureaucratic impediments and the authorities' notorious inefficiency¹.

In this case and taking advantage of the Commission's Directive 81/2009/EC, which provides for the promotion of the domestic DIB, Greece is expected to accrue multiple benefits following the operation of such a major producer given its comparative advantage in shipping transportation and merchant marine clusters. It is important to stress at this point that the economic dimension of such benefits (GDP rise, unemployment reduction, technology transfer), will be accompanied by operational ones (immediate availability of equipment and support during crisis periods together with independence from foreign procurement agents, suppliers and firms) in a case in which the specific firm grows to be a producer of both defence and non-defence items.

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¹ The ENAE shipyards cover an area of 832.000m². They are equipped with two major dry docks of 500 and 250 thousand tons, the former being the largest in the Mediterranean, as well as with three smaller ones (72, 60 and 36 thousand tons). This yard uses, in addition, a synchro lift. Yet, it has been kept inactive for a considerable time period following a penalty imposition from the part of the European Commission on account of its past state subsidization. A possible bargain in this case would simply involve a loan arrangement to pay off the €500 million penalty, lifting in return, all prohibitions concerning possible defence and non-defence equipment production and export by the company. One must bear in mind that producing exclusively to satisfy the Hellenic Navy needs is clearly only a short-term option during a period in which export orientation can guarantee the long-term prospects of the largest shipyards in the area. A solution along these lines and in view of the Chinese Cosco proposal to invest in this case will allow, to a large extent, the re-employment of those that have been previously employed in the ENAE, while it will contribute to the country's growth rate through both the firm's own production as well as its support to a cluster of complementary shipbuilding firms.

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Ναυτιλία και Ναυτική Ισχύς: Η Ελληνική Περίπτωση από την Αρχαιότητα έως Σήμερα

Ζήσης Φωτάκης

Σχολή Ναυτικών Δοκίμων, Τομέας Ανθρωπιστικών και Πολιτικών Επιστημών

Περίληψη. Το άρθρο αυτό επισκοπεί τις μεταπτώσεις της ελληνικής ναυτιλίας διαχρονικά επισημαίνοντας ότι η ευδοκίμησή της συνδέεται σταθερά με την ελευθερία των θαλασσών και την απουσία θεσμικών διακρίσεων σε βάρος του ελληνικού εμποροναυτικού κόσμου. Αναδεικνύει επίσης το μέρισμα της ασφάλειας που καρπούνταν οι εκάστοτε ελληνικές κρατικές οντότητες από την επιτυχή πορεία της ελληνόκτητης ναυτιλίας, διαπιστώνοντας επίσης τη στενή σχέση της ναυτιλιακής ισχύος με τη ναυτική ισχύ του Ελληνισμού.

Abstract. This paper summarizes the fluctuations of Greek shipping across time and establishes a connection between its progress, the freedom of the seas and the absence of institutional discriminations against the Greek shipping community. It also points out that greater Greek-owned maritime strength has always meant more security for Hellenism.

Λέξεις κλειδιά: Ελλάδα, Ναυτιλία, Ναυτική Ισχύς, Μεσόγειος, Μερκαντιλισμός, Φιλελευθερισμός

Η διαχρονική διάδραση της ελληνικής ναυτιλίας με τη ναυτική ισχύ των κρατικών οντοτήτων του Ελληνισμού αποτελεί ένα από τα σημαντικότερα αντικείμενα που διδάσκονται στους Ναυτικούς Δοκίμους στο πλαίσιο του μαθήματος της Ναυτικής Ιστορίας. Το παρόν ευσύνοπτο άρθρο συνοψίζει τις σχετικές αναφορές στοχεύοντας στην ενημέρωση, όσμωση και συναντίληψη μεταξύ του ναυτικού και του ναυτιλιακού κόσμου της χώρας μας.

Η σχέση του ελληνισμού με τη θάλασσα είναι σχεδόν σύγχρονη με την παρουσία του στη νότια απόληξη της Χερσονήσου του Αίμου. Κι αυτό γιατί η θέση και η μορφολογία του ελληνικού χώρου παρουσιάζουν χαρακτηριστικά που σε μεγάλο βαθμό εξηγούν το σημαντικό ρόλο που διαδραμάτισε και συνεχίζει να διαδραματίζει η θάλασσα στην ιστορία των Ελλήνων. Οι καθαροί ουρανοί της Μεσογείου, τα λίγα ισχυρά της ρεύματα και οι μέτριοι σχετικά άνεμοι προσφέρονται για την ανάπτυξη της ναυτιλίας ακόμη και πρωτόγονων ιστιοφόρων ή κωπήλατων πλοιαρίων όπως αυτά της αρχαιότητας και των μεσαιωνικών χρόνων. Συνάμα, το πολυσχιδές των ελληνικών παραλίων, ο μεγάλος αριθμός των φυσικών λιμένων και η πολυνησία του ελληνικού χώρου προς την κατεύθυνση της Ασίας, της Δυτικής Ευρώπης και της Αφρικής ανέδειξαν από νωρίς τον ελληνικό γεωγραφικό χώρο σε κόμβο θαλάσσιων επικοινωνιών. Το άγονος τέλος και το ορεινό του ελληνικού εδάφους αλλά και ο κατακερματισμός του σε μικρές κοιλάδες δύσκολα προσβάσιμες από ξηράς αλλά με μέτωπο στη θάλασσα ενθάρρυναν τις μεταναστευτικές τάσεις των ελλήνων και συνέτειναν στην ανάδειξη της Ελλάδας σε διεθνές ναυτιλιακό κέντρο που αγκάλιασε μέσω των αποικιών της όλη τη Μεσόγειο κατά την Αρχαιότητα [1].

Η ναυτιλιακή ρώμη του Αρχαίου Ελληνισμού οδήγησε, αναπόδραστα, και στην ανάπτυξη υπολογίσιμης ναυτικής ισχύος από τις ελληνικές πόλεις κράτη και τα ελληνιστικά βασίλεια που τις διαδέχθηκαν. Μια ναυτική ισχύς που απέτρεψε την πολιτικο-οικονομική κυριαρχία της Μεσογείου από τον Φοινικικό, τον Περσικό ή τον Καρχηδονιακό παράγοντα και κατέστησε δυνατή τη θεμελίωση και την προαγωγή του Δυτικού Πολιτισμού [2].

Η ρωμαϊκή κατάκτηση της Μεσογείου και η μακραίωνη Pax Romana που ακολούθησε ευνόησαν την ανάπτυξη της ελληνικής ναυτιλίας. Στο ίδιο αποτέλεσμα συνέτεινε η καταστροφή της μεγάλης ανταγωνίστριας των Ελλήνων στη Δύση, της Καρχηδόνας, από τον Σκιπίωνα τον

Αφρικανό το 146 π.Χ. καθώς και η πύαξη της πειρατείας από τον Πομπηίο το 67 π.Χ. [3]. Μολοταύτα, η κατασκευή της Εγνατίας και άλλων αυτοκρατορικών οδών στην Εγγύς και στη Μέση Ανατολή παρέκαμψαν, εν πολλοίς, την κεντρική και νότια Ελλάδα και οδήγησαν σταδιακά σε μείωση της οικονομικής και της γεωπολιτικής της σημασίας [4]. Συνέβη δηλαδή τότε, τηρουμένων των αναλογιών, ό,τι συνέβη και μεταξύ της ανακάλυψης της Αμερικής (1492) και της Αγγλικής επέκτασης προς τις Ινδίες (1763): η ανακάλυψη νέων ηπείρων και η παράκαμψη της απειλητικής Οθωμανικής Ανατολής στην επικοινωνία της Ευρώπης με τις Ινδίες και την Άπω Ανατολή, είχαν αρνητικό αντίκτυπο στη ναυτική σημασία του γεωγραφικού χώρου της Ελλάδας και του ναυτικού της κόσμου [5].

Η μεταφορά της πρωτεύουσας του Ρωμαϊκού κράτους από τη Ρώμη στην Κωνσταντινούπολη, η πρόσκαιρη ανασύσταση της Ρωμαϊκής κυριαρχίας στη Μεσόγειο από τον Ιουστινιανό αλλά και η σταδιακή μετατόπιση του κέντρου βάρους της Ανατολικής Ρωμαϊκής Αυτοκρατορίας στο χώρο του Αιγαίου και της Ανατολικής Μεσογείου ενίσχυσαν την ελληνική ναυτιλία κατά την Ύστερη Αρχαιότητα [6].

Η εμφάνιση, όμως, της Αραβικής θαλάσσιας απειλής κατά τον Πρώιμο Μεσαίωνα οδήγησε το Βυζάντιο στην υιοθέτηση περιοριστικών εμπορικών πρακτικών εμποδίζοντας την αναπλήρωση από Βυζαντινούς πόρους του μεγάλου Αραβικού ελλείμματος σε ναυπηγική ξυλεία και μέταλλα. Η γενικότερη απαγόρευση εξαγωγών που επιβλήθηκε στον Βυζαντινό ναυτεμπόριο και ο περιορισμός των ξένων εμπόρων σε συγκεκριμένα μόνο Βυζαντινά λιμάνια, ώστε να ελέγχεται αποτελεσματικά το εξωτερικό εμπόριο της αυτοκρατορίας, είχαν ως αποτέλεσμα την εξασθένηση του Βυζαντινού ναυτεμπορικού κόσμου που στράφηκε σταδιακά σε γεωργικές απασχολήσεις, αναιρώντας έτσι την αναγκαία σχέση μεταξύ εμπορικής και πολεμικής ναυτιλίας. Μόνο οι Βυζαντινές κτήσεις της Βενετίας και της περιοχής του Αμάφι εμπορευόντουσαν ελεύθερα με την υπόλοιπη αυτοκρατορία, το Μουσουλμανικό κόσμο και τη Δυτική Ευρώπη. Η έκκεντρη θέση τους κατέστησε αδύνατο τον αποτελεσματικό έλεγχό τους από την Κωνσταντινούπολη και έτσι κατόρθωσαν να αναπτυχθούν ναυτιλιακά. Ήταν δε σε θέση να συνδράμουν αποφασιστικά το Βυζαντινό στόλο που βρισκόταν συγκεντρωμένος στην Κωνσταντινούπολη από την βασιλεία του Βασιλείου του Βουλγαροκτόνου και μετά.

Η ναυτική βοήθεια που έκτοτε παρασχέθηκε στη Βυζαντινή αυτοκρατορία από τη Βενετία, τη Γένοβα, την Πίζα και άλλες ναυτικές πόλεις της Ιταλίας ανταμείφθηκε από το Βυζάντιο με παραχώρηση ολοένα και μεγαλύτερων ναυτιλιακών προνομίων σε αυτές. Το αποτέλεσμα ήταν ότι ο Βυζαντινός ναυτιλιακός κόσμος βυθίστηκε σε ακόμα μεγαλύτερη κρίση καθιστώντας τους ευμεγέθεις πολεμικούς στόλους, που ναυπήγησε η δυναστεία των Κομνηνών, γίγαντες με πηλίνα πόδια, αφού μεγάλο μέρος της Βυζαντινής ναυτοσύνης είχε ήδη στραφεί στην αγροτική παραγωγή [7].

Η Άλωση της Κωνσταντινούπολης από τους Φράγκους το 1204 και η υποδούλωση αρχικά σε αυτούς και αργότερα και στους Οθωμανούς Τούρκους των κομβικότερων σημείων των ελληνικών θαλασσών σηματοδότησαν τη μακραιώνη κάμψη του ελληνικού ναυτιλιακού κόσμου [8]. Τα ναυτεμπορικά προνόμια των Δυτικών σε βάρος των Ελλήνων ναυτίλων συνεχίστηκαν και διευρύνθηκαν μέσω της θέσπισης μερκαντιλιστικών "Νόμων της Ναυτιλίας" και μέσω των σχετικών διομολογήσεων που παρέσχον οι Οθωμανοί Σουλτάνοι αρχικά στη γαλλική και αργότερα και στην Αγγλική και στην Ολλανδική ναυτιλία [9].

Η Ρωσική πάντως επέκταση στη Μαύρη θάλασσα και η αντίστοιχη Αυστριακή στα Βαλκάνια και στην Αδριατική σε βάρος της Οθωμανικής Αυτοκρατορίας κατά το 18ο αιώνα οδήγησαν στην προώθηση της ελληνικής ναυτιλίας μέσω της παραχώρησης σχετικών προνομίων στους Έλληνες της Οθωμανικής Αυτοκρατορίας [10]. Τα προνόμια αυτά, η κατάλυση της Βενετικής Δημοκρατίας και του κράτους των Ιπποτών της Μάλτας καθώς και η υποχώρηση του κυρίαρχου ως τότε Γαλλικού εμπορίου στην Ανατολική Μεσόγειο κατά τους Ναπολεόντειους πολέμους προσέδωσαν σταδιακά στους Έλληνες σημαίνοντα ρόλο στις ναυτικές μεταφορές της Ανατολικής Μεσογείου μετά από αρκετούς αιώνες [11].

Η απόκτηση από τους Έλληνες σημαντικής ναυτιλιακής ισχύος στις παραμονές της Επανάστασης του 1821 τους παρέσχε επίσης τη ναυτική ισχύ που έλειπε στα προηγούμενα 40 περίπου κινήματα/επαναστάσεις τους κατά τη διάρκεια της Τουρκοκρατίας. Πράγματι, αν απέκτησαν οι Έλληνες την Ανεξαρτησία τους το 1830, οφείλονταν κατά κύριο λόγο στο γεγονός ότι διέθεταν, για πρώτη φορά στους Νεότερους Χρόνους, έναν ευάριθμο εμπορικό στόλο που μετατράπηκε σε πολεμικό για τις ανάγκες της Επανάστασης. Δεδομένου ότι η από θαλάσσης επικοινωνία ήταν η μόνη αποτελεσματική πηγή ανεφοδιασμού για εισβολείς στη Νότια Ελλάδα κατά τους προβιομηχανικούς χρόνους, το ελληνικό ναυτικό προσέφερε μεγάλες υπηρεσίες στον Αγώνα με το να παρενοχλεί συστηματικά και να διακόπτει αποτελεσματικά τις τουρκικές επικοινωνίες. Όπως άλλωστε απέδειξε η αδυναμία του ελληνικού ναυτικού να αποσοβήσει και να εξαρθρώσει το προγεφύρωμα που εγκατέστησε ο Ιμπραήμ στην Πελοπόννησο στις αρχές του 1825, χωρίς τη δράση του ελληνικού ναυτικού η επαναστατημένη Ελλάδα θα είχε από νωρίς κατακλυσθεί από εχθρικά στρατεύματα και η Επανάσταση θα είχε μάλλον την τύχη των ελληνικών επαναστατικών κινήματων που προηγήθηκαν αυτής [12].

Η ελληνική ναυτιλία αποδεκατίσθη κατά τη διάρκεια της Επανάστασης του 1821 και το 1830 η χωρητικότητα της δεν ξεπερνούσε τους 80.000 τόνους. Παρά την καταστροφή αυτή, που επαναλήφθηκε και στους δύο Παγκοσμίους Πολέμους του 20ου αιώνα, η χωρητικότητά της έφτασε τα 85 εκατομμύρια τόνους το 1999 κατέχοντας την πρώτη θέση στην παγκόσμια ναυτιλία. Μια θέση, που διατηρεί επίζηλα τον τελευταίο μισό περίπου αιώνα.

Η μεγάλη αυτή επιτυχία οφείλεται στη διαδοχή του μερκαντιστικού οικονομικού συστήματος από τον οικονομικό φιλελευθερισμό από το 1850 και μετά, παρά τις όποιες πρόσκαιρες αναβιώσεις του προστατευτισμού στο διεθνές οικονομικό σύστημα. Οφείλεται επίσης στη μείωση του λειτουργικού κόστους των ελληνόκτητων ναυτιλιακών επιχειρήσεων που κατέστη εφικτή από την ελαστικότητα των ναυτιλιακών νόμων και ελεγκτικών μηχανισμών του ελληνικού κράτους. Συνάμα, η συγκρότηση δυναμικά ανανεούμενων δικτύων ελλήνων εφοπλιστών -κύρια συστατικά των οποίων είναι η άμιλλα, η συνεργασία και τα χαμηλά ποσοστά συγκέντρωσης χωρητικότητας- πιστώνεται μέρος της μεγάλης αυτής επιτυχίας. Τέλος, η συνεπής αντικυκλική επενδυτική συμπεριφορά των ελλήνων εφοπλιστών, η εξειδίκευσή τους στη μεταφορά χύδην και ενεργειακών φορτίων, η στενή τους σχέση με τους παραγωγούς και τους καταναλωτές των φορτίων που μεταφέρουν και η προθυμία τους να αναλάβουν μεγάλο ρίσκο σε εμπόλεμες ζώνες αποδίδουν και πάλι το μυστικό της επιτυχίας της ελληνόκτητης ναυτιλίας τους τελευταίους δύο αιώνες [13].

Η επιτυχία της ελληνόκτητης ναυτιλίας συνέβαλε αποφασιστικά και στην επιτυχία του ελληνικού Πολεμικού Ναυτικού καθώς του παρέσχε έμπειρα στελέχη, πλοία για τις θαλάσσιες μεταφορές εν πολέμω και σημαντικό εισόδημα διαχρονικά, μέσω της φορολογικής της συνδρομής στον κρατικό προϋπολογισμό. Παρέσχε επίσης μεγάλη στρατηγική ωφέλεια στους δύο παγκοσμίους πολέμους του 20ου αιώνα, αλλά και μεταπολεμικά, καθώς αντιπροσωπεύει έως και το 1/4 του αξιοποιήσιμου εμπορικού στόλου για τις πολεμικές μεταφορές του NATO [14].

Συνοψίζοντας, όποτε η ελληνική ναυτιλία έδρασε σε καθεστώς οικονομικής ελευθερίας μεγαλούργησε, ενισχύοντας παράλληλα την αποτρεπτική ισχύ των ελληνικών κρατικών οντοτήτων και το γεωπολιτικό εκτόπισμά τους. Η παραδοχή αυτή αποτελεί το έρεισμα της οπτικής των Ναυτικών Δοκίμων έναντι της ελληνόκτητης εμπορικής ναυτιλίας που καθιστά ευχερή και επιβεβλημένη τη σχετική όσμωση και συνεργασία.

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Die auswärtige Kulturpolitik der Deutschen Demokratischen Republik. Bemühungen um politische Anerkennung durch kulturelle Aktivitäten in Griechenland

Aimilia Rofouzou

*Assist. Professor
für Deutsche Sprache und Philologie
Hellenische Marineakademie
emiliarofousou@daad-alumni.de
erofouzou@snd.edu.gr*

Abstract. This article aims, through a study case, to show how the culture of a nation can act as a channel of communication and "self-promotion". The purpose of this study is to highlight the dynamics of cultural inheritance and production of the German Democratic Republic. It will focus on the efforts of the GDR to develop cultural relations with Greece with the view to gaining international diplomatic recognition.

Keywords: Greece, German Democratic Republic, Culture, Foreign Cultural Policy

EINFÜHRUNG

Die beiden deutschen Staaten, die Bundesrepublik Deutschland und die Deutsche Demokratische Republik (DDR), bildeten in der Auseinandersetzung der Blöcke eine besondere Machtstelle. In der Zeit des Kalten Krieges beabsichtigte die Bundesrepublik die DDR international zu isolieren, insbesondere mit Hilfe der sogenannten Hallstein – Doktrin [1].¹ Ostberlin hingegen war sehr um internationale Anerkennung bemüht, wie auch um Abgrenzung gegenüber der Bundesrepublik Deutschland [2].

Die auswärtige Kulturpolitik der DDR, die hier im Mittelpunkt steht, sollte das Ansehen der DDR im Ausland steigern und den Eindruck eines im Gegensatz zur rivalisierenden Republik "friedliebenden deutschen Staates" erwecken, sowie den ostdeutschen Staat als "wahren Hüter des deutschen kulturellen Erbes" präsentieren [3]. Die DDR blieb bestrebt, die Bundesrepublik als militaristischen Staat zu präsentieren, ihr eine unzureichende Aufarbeitung der NS-Vergangenheit zu unterstellen und sich damit zwangsläufig selbst als das "andere bessere Deutschland" darzustellen [4]. Zu diesem Zweck sollten kulturelle und wissenschaftliche Kontakte mit dem Ausland geknüpft bzw. intensiviert werden, was nach dem Wunsch Ost-Berlins in die Aufnahme diplomatischer Beziehungen münden sollte [5].

Hauptmittel dieser Bemühungen war daher die Förderung der kulturellen Aktivitäten im Ausland -die "dritte Säule der Außenpolitik" [6]. Durch Betonung ihrer eigenen Errungenschaften

¹ Im Dezember 1955 drohte die BRD, ihre diplomatischen Beziehungen mit allen Ländern abubrechen, die die DDR staatlich anerkennen wollten. Die Hallstein – Doktrin, benannt nach dem Sekretär des Auswärtigen Amtes der Bundesrepublik und dem späteren ersten Präsidenten der Europäischen Kommission, Walter Hallstein, wurde im Jahr 1957 gegen Jugoslawien angewandt und später gegen andere Länder. Anfang der 70er Jahre wurde sie jedoch aufgegeben.

versuchte die DDR ab den 70er Jahren zu unterstreichen, dass es nicht nur zwei gegenüberstehende deutsche Staaten und Nationen gab, sondern auch zwei deutsche Kulturen. So wollte die Sozialistische Einheitspartei (SED) in allererster Linie das Profil des Landes im Westen verbessern [7], ihren kulturellen Einfluss dort stärken und damit auch politischen Einfluss gewinnen [8].

Ganz so einfach wie erhofft waren die gewünschten Ziele jedoch nicht zu erreichen, auch nicht in Griechenland. Die Haltung der Bundesrepublik Deutschland auf der einen Seite, von der Griechenland ökonomisch abhängig war, und die starke sozialistische Identität der zeitgenössischen kulturellen Aktivitäten Ostdeutschlands auf der anderen Seite -vor allem in den Bereichen Malerei, Musik, Theater und Film- begrenzte von vornherein die Wirkung der kulturellen Selbstdarstellung der DDR [9]. Auch war die westliche Welt nicht ohne weiteres bereit, die angebliche Zweiteilung der deutschen Nationalkultur für bare Münze zu nehmen. Aus diesem Grund durfte eine Annäherung an das westliche Ausland in der Kulturpolitik nur mit großer Umsicht und in gemäßigttem Tempo erfolgen.

DIE KULTURELLEN AKTIVITÄTEN OST-BERLINS IN GRIECHENLAND

Im Rahmen dieser Politik und wegen der oben genannten Schwierigkeiten vermied die SED-Führung zunächst reine Propaganda sowie die offene Konfrontation mit der Bundesrepublik Deutschland und versuchte, ihr kulturelles Erscheinungsbild im Ausland durch die Ausnutzung des klassischen deutschen Kulturerbes zu prägen.

In der Phase der Nicht-Anerkennung spiegelten sich die Richtlinien des Ministeriums für Auswärtige Angelegenheiten der DDR (MfAA) in der Direktive wider, jede Gelegenheit auf kultureller, wirtschaftlicher, handelspolitischer, wissenschaftlicher Ebene zu ergreifen, um die staatliche Anerkennung durchsetzen zu können [10]. Diese Direktive in Verbindung mit der Ausnutzung des klassischen deutschen kulturellen Erbes auf der einen Seite und den Initiativen wichtiger Persönlichkeiten der griechischen Kultur auf der anderen Seite bereiteten den Boden für die erste Ausstellung mit ostdeutscher Beteiligung in Griechenland. Diese Schaufensterausstellung, die in einer der größten Buchhandlungen Athens gezeigt wurde, wurde anlässlich der Premiere von "Mutter Courage und ihre Kinder" des Regisseurs Takis Mouzenidis im Theater Kyveli am 21.11.1958 organisiert –Hauptdarstellerin war die berühmte griechische Schauspielerin Kyveli. Es handelte sich um die Ausstellung "Das Berliner Ensemble" mit Szenenfotos, Plakaten, Werken Brechts, Programmen, Prospekten und ähnlichem Material. Als Folge dieser Ausstellung wurden im genannten Theater 500 Exemplare der Broschüre "Bertolt Brecht und das Berliner Ensemble" verteilt. Desweiteren wurde eine neue Ausstellung Ende 1959 im Foyer des Athener Theaters und in anderen griechischen Städten präsentiert [11].

Eine zweite wichtige Ausstellung, an der die DDR teilnahm, fand wenig später ebenfalls in Griechenland statt. Es handelte sich um die Ausstellung der Akademie der Künste mit dem Thema "Das Bühnenbild von 1945 - 1958", die vom griechischen Verband der Bühnenbildner übernommen wurde und im Mai 1960 in Athen stattfand [12].

Darüber hinaus organisierte die DDR-Führung mit ähnlichen Absichten eine Woche der DEFA-Filme im Jahr 1958 in Griechenland. Diese Filmwoche sollte in Zusammenarbeit mit einer griechischen Firma stattfinden, die in der Vergangenheit bereits 22 DEFA-Filme übernommen hatte, von denen 8 schon aufgeführt worden waren. In diesen Tagen sollten folgende Filme aufgeführt werden: "Lissy" mit dem Kurzfilm "Zwischen Himmel und Erde"; "Betrogen bis zum jüngsten Tag" (unter dem griechischen Titel "Vor dem Feuerbefehl") mit dem Kurzfilm "Dresden – unvergängliche Stadt"; "Ehe im Schatten" (in Griechenland "Eine Liebe, stärker als der Tod" genannt) mit dem Kurzfilm "Die große Wanderung"; "Das kalte Herz" ("Das steinerne Herz") mit dem Kurzfilm "Eine Nacht wie jede andere"; "Die Premiere fällt aus" ("Das Verbrechen hinter den

Kulissen") mit dem Kurzfilm "Das steinerne Gesicht Dalmatiens" und "Mazurka der Liebe" ("Der Landstreicherstudent").

Es war auch ein Kinderprogramm vorgesehen und zwar zwei Filme, die im Anschluss an einige Trickfilme gezeigt werden sollten. Diese zwei Filme hießen "Die Fahrt nach Bamsdorf" (unter dem griechischen Titel "Der junge Odysseus") und "Abenteuer in Bamsdorf" (unter dem griechischen Titel "Die jungen Forscher"). Die Trickfilme waren die Folgenden: "Die Geschichte vom Hasen, der nicht lernen wollte", "Die gestohlene Nase", "Das vergessene Püppchen", "Katze und Maus", "Frechheit siegt nicht", "Fips der Störenfried" und "Der kleine Häwelmann".

Dem offiziellen Athen ging dies jedoch zu weit, und es untersagte die Durchführung dieser Festwoche [13]. Trotz dieses Misserfolges gelang es der DDR, zwei der oben genannten Filme zur Aufführung zu bringen, nämlich die Filme "Mazurka der Liebe" und "Ehe im Schatten". Die Filme wurden in der Woche vom 6.4. - 12.4.1959, für drei und für vier Tage, als reguläres Filmprogramm in einem griechischen Kino aufgeführt [14]. In der Folgezeit wurden noch zwei weitere Filme nach Griechenland entsandt, wenngleich unklar ist, ob sie öffentlich gezeigt werden konnten. So erhielt die staatliche Hochschule für Film den kommerziellen Streifen 'Ein Tagebuch für Anne Frank' und die DDR-Handelsvertretung in Athen den Propagandastreifen '10 Jahre DDR' [15].

Zum regulären Programm der griechischen Kinos ist noch erwähnenswert, dass nach langer Pause im Jahr 1961 noch ein DDR-Film in Athen gezeigt wurde. Es handelt sich um "Thomas-Münzer", der unter dem griechischen Titel "Für ein Stück Land" vorgeführt wurde. Der Film, dessen Erstaufführung am 20. März 1961 im Kino "Rivoli" stattfand, erhielt trotz seiner Problematik in der griechischen Presse ausgezeichnete Kritiken und wurde auch vom Publikum hoch gelobt [16].

Auf Wunsch der DDR-Verantwortlichen sollte das Ansehen der DDR durch die Teilnahme an den Festspielen in Athen und Thessaloniki wieder wachsen, nachdem die Reputation des SED-Regimes durch den Mauerbau auch in Griechenland schwer gelitten hatte. Schriftliche Unterlagen dokumentieren eine solche Beteiligung 1962/1963, als die Staatsoper Ostberlins an den Athener Festspielen teilnahm [17]. Wenig später partizipierte die DDR auch beim Internationalen Filmfestival in Thessaloniki, das zeitgleich mit der Messe in Thessaloniki stattfand und so dem Ansehen der DDR in Griechenland besonders förderlich sein konnte. Ostdeutsche Quellen erwähnen, dass seitens der DDR der Streifen "Der fliegende Holländer" gezeigt wurde [18], während eine sehr zuverlässige griechische Quelle den Film "Königskinder" angibt, einen Spielfilm von Frank Beyer [19], dem einzigen Regisseur, der eine Oskar-Nominierung für eines seiner Werke erhielt. Darüber hinaus hielt der Regisseur des 'Berliner Ensembles' im Jahr 1964 anlässlich der griechischen Brecht-Aufführung im Karolos Koun-Theater eine Reihe von Vorträgen über Brecht und dessen Werke [20].

Im Kinobereich wurde der DEFA-Film "Nackt unter Wölfen", ebenfalls von Frank Beyer, mit großem Erfolg in Griechenland gezeigt [21], während mit der Unterstützung der Freundschaftsgesellschaft Griechenland-DDR 1965 in mehreren griechischen Kinos, u.a. im 'ASTOR', der Film "Werner Holt" vorgeführt wurde [22]. Die Freundschaftsgesellschaft, gegründet am 28.05.1965, und ihr Pendant in der DDR, die FG DDR-Griechenland, die knapp ein Jahr später gegründet wurde, haben zum Ausbau der bilateralen Kulturbeziehungen erheblich beigetragen [23].

Ein paar Monate zuvor, Anfang Januar, wurde mit großem Erfolg in der Galerie 'Zygos' eine Ausstellung mit graphischen Werken von Käthe Kollwitz eröffnet [24], gefolgt von Ausstellungen in Thessaloniki und in anderen griechischen Städten [25]. Als Ergebnis der engen Zusammenarbeit der ostdeutschen staatlichen Gesellschaft Buchexport und -import mit der linken Buchhandlung Themelio wurde ferner eine Buchausstellung beträchtlichen Umfangs organisiert. So wurden Werke mathematisch-technischen Inhalts, Kunstbücher, Klassiker-Ausgaben, politisch gefärbte schöne Literatur, Werke von Bertolt Brecht und Johannes R. Becher, Gesamtausgaben

der Klassiker des Marxismus–Leninismus sowie, von besonderer politischer Bedeutung, 2.000 Hefte der DDR- Revue gezeigt [26].

Wichtig für die auswärtige Kulturarbeit der DDR waren auch die Konzerte des Bachorchesters des Leipziger Gewandhauses in Athen und auf der Insel Kreta. Mit Hilfe der Firma 'Atom' konzertierte das Bachorchester am 18.8.1965 im antiken Freilichttheater des Herodes Atticus und dann auf Kreta, in Chania am 21.8. und in Heraklion am 22.8. [27] Diese Aufführungen wurden vom griechischen Publikum mit Begeisterung aufgenommen. Darüberhinaus ermöglichten sie der DDR, politische Propaganda zu betreiben, ihre Selbstdarstellung als „der andere friedliebende, deutsche Staat“ zu fördern und all dies auf Kreta, einer Insel, die noch bis heute starke Erinnerungen an die NS-Vergangenheit hat [28].

Während dieser ersten Phase der Nicht-Anerkennung gelang es der DDR auf diese Weise, ihr Ansehen auf griechischem Boden zu steigern. Die Anstrengungen seitens der Ostberliner Führung, in Griechenland populärer zu werden, wurden jedoch während der Periode der Militärdiktatur unterbrochen und der Anstieg der ostdeutschen kulturellen Aktivität in Griechenland erlitt einen gewissen Einbruch. Die bilateralen Beziehungen beschränkten sich in dieser Periode nur auf den Handel.

Im Rahmen der internationalen politischen Entspannung und nach der Unterzeichnung des Grundlagenvertrags am 21. Dezember 1972 zwischen den beiden deutschen Staaten [29], konnten Griechenland und die DDR am 25. Mai 1973 ein Abkommen über die Aufnahme diplomatischer Beziehungen unterzeichnen [30]. Es muss aber betont werden, dass die Athener Junta die Anerkennung der DDR in der erkennbaren Absicht betrieb, so ihren eigenen außenpolitischen Spielraum zu vergrößern. Aus der Sicht der Militärdiktatur war eine Annäherung an sozialistische Länder auf diese Weise leichter und durch die Erwähnungen in deren Presse konnten die Festigung ihrer Machtstellung und gleichzeitig die Beruhigung der Kommunisten in Griechenland durchgesetzt werden.

Nach diesem Schritt veränderten sich die Beziehungen zwischen den beiden Staaten, doch eine substantielle politische Zusammenarbeit ist erst ab 1981 mit der Regierung Papandreou sichtbar. Zahlreiche Gipfelkonferenzen fanden statt und mehrere Abkommen wurden unterzeichnet: über Zusammenarbeit auf dem Gebiet von Rundfunk und Fernsehen 1983, über Zusammenarbeit im Gesundheitswesen 1984, über wissenschaftlich-technische Zusammenarbeit 1984 und über Zusammenarbeit auf dem Gebiet des Tourismus 1988. Von außerordentlicher Bedeutung war jedoch ohne Zweifel das Abkommen über Zusammenarbeit auf den Gebieten der Kultur und Wissenschaft im Juli 1982 [31]. Diese Vereinbarung und die darauf aufbauenden Arbeitspläne bildeten die Grundlage für die Entwicklung der kulturellen und wissenschaftlichen Beziehungen zwischen den beiden Staaten [32].

So wurde eine Vereinbarung zwischen der Panhellenischen Kulturbewegung (PAPOK) und dem Kulturbund der DDR unterzeichnet [33], während von größerer Bedeutung der Auftritt des Tanzensembles der Komischen Oper im Oktober 1982 in Thessaloniki war [34].

Unter diesen Umständen gewannen die kulturellen Beziehungen zwischen den beiden Staaten an Substanz und es gelang der DDR, immer besser auf griechischem Boden kulturell aktiv zu sein. Viele Beispiele kulturellen Austausches -Veranstaltungen aller Art, Musik- und Theateraufführungen, Kunstausstellungen, Filmvorführungen, Buchmessen, usw. [35] - sind zu erwähnen. Das letzte Beispiel seitens der Ostdeutschen waren die in Athen aufwendig organisierten kulturellen Festveranstaltungen im Jahr 1989 zum 40. Jahrestag der DDR [36].

SCHLUSSFOLGERUNGEN

Zusammenfassend kann man sagen, dass die DDR vielerlei Anstrengungen unternahm, um in Griechenland kulturell aktiv zu sein. Durch gut organisierte Bemühungen und geschickte Finanzierung sowie durch die Vermeidung grobschlächtiger politischer Propaganda und die

"Ausnutzung" des klassischen deutschen Kulturerbes, gelang es ihr, Verbindungen zu knüpfen und ihre Ziele zu erreichen, nämlich die Aufnahme diplomatischer Beziehungen und die Steigerung ihres Ansehens als eine auf wissenschaftlicher und kultureller Ebene entwickelte Republik.

In Griechenland versuchte die DDR in der Phase der Nicht-Anerkennung durch den Ausbau der Handelsbeziehungen Einfluss zu gewinnen. Grundlage dafür war die Errichtung der Handelsvertretung in Athen. Priorität hatte jedoch entsprechend den außenpolitischen Zielen der DDR die Selbstdarstellung auf griechischem Boden, vor allem durch die Durchführung von Ausstellungen, Filmaufführungen und die Auftritte berühmter Orchester und Künstler.

Ergebnis dieser Anerkennungspolitik der DDR war eine feste Zusammenarbeit zwischen den beiden Staaten auf allen Gebieten der Wissenschaft und Kultur, die sich für beide Völker als konstruktiv erwies.

Es ist jedoch nicht so einfach festzustellen, welche Auswirkungen diese Bemühungen auf das Bewusstsein der Griechen tatsächlich hatten. Es kann als sicher gelten, dass das griechische Publikum in der Regel den ostdeutschen kulturellen Aktivitäten besondere Beachtung schenkte, es ist aber zu bezweifeln, ob die Hochachtung für die Künstler auch in die Adaption sozialistischen Gedankengutes mündete. Eine Schlüsselrolle bei der Darstellung der DDR – Errungenschaften in Griechenland spielte eher das klassische deutsche Kulturerbe. Dies gilt auch für die Zeit nach dem Sturz der Militärdiktatur in Griechenland sowie nach dem Abschluss des Kulturabkommens 1982. Obwohl die aus strategischen Gründen aufgenommenen diplomatischen Beziehungen eine wesentliche Voraussetzung für die weitere Entwicklung der politischen, kulturellen und wissenschaftlichen Kontakte zwischen den beiden Staaten waren und die meisten Hürden aus dem Weg räumten, die aus der Sicht der DDR ihre kulturpolitischen Initiativen seit mindestens drei Jahrzehnten eingeschränkt hatten, ließ sich das gewünschte Bild der DDR als das bessere Deutschland schwerlich in das Bewusstsein der Menschen implantieren.

Trotz dieser 'Einzelheit' kann als sicher gelten, dass die Aussichten auf den Ausbau der Zusammenarbeit zwischen den beiden Staaten vielversprechend schienen. Die Entwicklungen in der politischen Szene waren jedoch rasch und der Zusammenbruch der Deutschen Demokratischen Republik 1989-1990 zur allgemeinen Überraschung unvermeidlich.

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Bewältigung der „Ostalgie“ am Beispiel des Wendefilms

Sonnenallee (Haußmann, 1999)

Evangelia Tsiavou

Ειδική Επιστήμονας
Σχολή Ναυτικών Δοκίμων
etsiavou@snd.edu.gr

Abstract. In the last years a lot of german films visualize stories about the fall of Berlin's wall and the time just before or shortly after it. It is interesting to examine if and how this new genre („Wendefilme“) contributes to the film-reception and the coping skills' development of this recent past.

Keywords: Ostalgie, Film, Zeitbewusstsein, Sonnenallee, Bewältigungsstrategie.

Einleitung

Der Zusammenhang zwischen Geschichte, Gedächtnis und Bewältigungsstrategien lässt sich bildhaft anhand der Vielzahl der Wendefilme illustrieren. Dabei kann von filmischen Inszenierungen der Geschichte gesprochen werden, die anhand der persönlichen und kollektiven Rezeption des Berliner Mauerfalls und der nachfolgenden Wende zu Stande gekommen sind. Als Träger der Erinnerungskultur (1) bieten Wendefilme fruchtbaren Boden für die Vergegenwärtigung historischer Ereignisse an und zugleich stellen sie Bewältigungsstrategien der Deutschen dar, mit diesem Geschichtsabschnitt umzugehen. Die innewohnende „Ostalgie“ wird von den medialen Gesetzmäßigkeiten der Wendefilme besonders begünstigt. Auf welche Weise all dies erfolgt, wird anhand des Films *Sonnenallee* (Haußmann, 1999) aufgezeigt.

Fragestellung

Diesem Gedankengang folgt der vorliegende Aufsatz, dessen zentrale These ist, dass das Filmmedium und besonders die Komödie zur Bewältigungsfähigkeit der Deutschen hinsichtlich der Wende einen bedeutsamen Beitrag geleistet hat. Im Rahmen der Drehbuchinterpretation von *Sonnenallee* wird zunächst gezeigt, wie das Zeitbewusstsein das Gedächtnis prägt und auf welche Weise es die Geschichtsschreibung in den Wendefilmen anhand des kinematographischen Mediums ermöglicht. Interessant ist zu erforschen, wie die Ostalgie sich im Film *Sonnenallee* manifestiert und insbesondere warum das filmische Medium die rezeptive Katharsis ermöglicht, die mittels anderer Medien viel aufwändiger ist.

Theoretischer Hintergrund

Warum man von Inszenierungen der Geschichte im Filmmedium spricht, ist leicht verständlich: historische Ereignisse werden im Medium des Films abgebildet, da der Film realitätsnahe oder

fiktive Zeitreisen erlaubt. Bei diesen Inszenierungen werden Zeitsequenzen des Gedächtnisses medialisiert und anhand von filmischer Bearbeitung zum Zweck der emotionalen und intellektuellen Verwicklung des Rezipienten, sowie seines Bedürfnisses nach Sinnggebung interpretiert. Dies findet auch im Fall der „Ostalgie“ statt, d.h. der Nostalgie des Lebens in der ehemaligen DDR, die hauptsächlich mittels Gegenständen visualisiert wird. (2)

Der Film und insbesondere *Sonneallee* bietet fruchtbaren Boden für die Medialisierung der Ostalgie an, indem die ostdeutsche Ästhetik optisch wieder belebt, während die Geschichtsrezeption anhand von Symbolen bearbeitet wird. Daher lässt sich der Anspruch darauf erheben, Ostalgie und Wendefilme in den gängigen Begriff der Erinnerungskultur mit einzuschließen, denn im Film werden private Rezeptionsweisen der Geschichte (des Drehbuchautors und des Regisseurs) aus einem aktuellem Standpunkt gleichermaßen mit der kollektiven Wahrnehmung gewichtet und wiedergegeben. Zugleich wird in Wendefilmen oft auf soziale Auseinandersetzungen, Verhältnisse und Probleme fokussiert, die die Narration initiieren oder darin integriert werden, wie in der nachfolgenden Kategorisierung der Wendefilme dargestellt wird. Zur „Kultur des Erinnerns“ gehören ereignisbasierte Elemente sowie Objekte, die im filmischen Kosmos symbolische Funktion bekommen. (3)

Sonnenalle ist sowohl der Vor-Wende-Zeit als auch dem Pop, dieser „Poetik der Oberfläche“ (4) gewidmet. Musik, Drogenkonsum, Reisen, sowie Produkte der Konsumwelt stehen im Mittelpunkt dieses Films. Pop-Kultur im Allgemeinen und aktueller Lifestyle durchdringen das Werk, während den Konsumgütern ein zentraler Stellenwert eingeräumt wird, da sie in Zeiten der DDR wegen des Produktemangels fetischisiert wurden. Ein essentieller Unterschied zwischen Pop- und Wendefilme beruht eben auf dem zentralen Stellenwert der historischen Umstände. Allerdings können Wendefilme wegen ihrer unterschiedlichen Beziehung zum zeitlichen Kontext nicht den historischen Filmen zugeordnet werden. Im Fall der Wendefilme bildet die erzählte Zeit den zeitlichen Kontext, während im historischen Film ein vergangener zeitlicher Kontext genommen wird, und deswegen eine Reise in die Vergangenheit gemacht werden muss. (5)

Bei der Begriffsbestimmung der Wendefilme spielen thematische Aspekte eine wesentliche Rolle: Die Darstellung von Missständen, die zur Wende geführt haben, die Behandlung der Wendeereignisse selbst, sowie die Schilderung des Lebens nach der Wende dienen in der Regel als Klassifikationsmomente. Abgesehen von der narrativen Struktur gehören dazu auch Filme, die „ das Leben in Deutschland vor und nach der Wende aus der Perspektive der Nachwendezeit reflektieren“ (6), Dokumentationen und Forschungsberichte über das Leben in der DDR, deren Veröffentlichung erst nach dem Mauerfall ermöglicht wurde.¹ Herkunft und Alter der Filmemacher sollten zudem bei den unterschiedlichen filmischen Verarbeitungsansätzen nicht außer Betracht gelassen werden. Diese Aspekte stellen Weisen der Geschichtsschreibung dar, die vom Gedächtnis Anstoß erhalten und in den Filmen Niederschlag finden.

Aus welchem Grund gelten Wendefilme als Mittler der Erinnerungskultur und auf welche Weise stellen sie Bewältigungsstrategien der Ostalgie dar? Um diesen Fragen nachgehen zu können, sollte die Anwendung der Freudschen Witztheorie auf die Filmrezeption in Betracht gezogen werden. Die Lustempfindung bewegt sich auf zwei zeitlichen Ebenen mit unterschiedlichen Funktion: anfänglich empfindet der Rezipient eine gewisse Vorlust, die der Witzform entstammt und Transformationstechniken (Verdichtung, Umstellung, Interpretation, Umkehrung) mit sich trägt. Zugleich wird der Zuhörer darauf vorbereitet und es wird gewissermaßen von ihm gefordert, die Zensur des politically correct aufzuheben, d.h. verbotenen Inhalten Zugang zu erlauben. Daher enthält die Vorlust ein gewisses Schuldpotential, das von der Mitschuld und der Komplizenschaft mit den anderen Zuhörern gemildert wird. Die Endlustabfuhr erfolgt mit dem kathartischen Lachen am Witzende und ist erst dann möglich, wenn verbotene oder abgewehrte Wünsche mittels des Witzes befriedigt werden, was der Witz anhand der sozial

¹ Obwohl Grub diese Kategorisierung auf literarische Werke bezog, findet sie auch auf die Wendeliteratur Anwendung, wenn auf die narrativen Momente fokussiert wird.

akzeptierten Rahmenbedingungen der Witzerzählung ermöglicht hat. Anders gesagt, unsere Lustempfindung ist die Folge einer zeitweiligen und blitzschnellen Aufhebung von Hemmungen. (7)

Ähnlich wird bei der Filmrezeption verfahren: schon gleich in den ersten Minuten einer Filmvorführung empfindet der Zuschauer Vorlust auf der folgenden Erzählung, weil er teilweise bewusst Urlaub von den Zensurschranken des Ichs und des Überichs macht. (8) Dabei wird er mit Hilfe der alles aufsehenden Kamera in der Rolle des Voyeuristen versetzt, der in einen fremden Realitätsabschnitt heimlich zuschaut. (9) Dies wird mit einem gewissen Schuldpotential beladen und mit den verbotenen Witzinhalten parallelisiert, die allerdings Projektionen und Identifikationen in Gang setzen. (10) Im Simulationsraum der alternativen Realitäten, der von der filmischen Konvention geschaffen wird, sind Probeidentifikationen unter sicheren Umständen erlaubt. Jedoch bringen sie eine gewisse Spannung und Schuldgefühle mit sich, die erst die kathartische Funktion des Filmendes die Endlustabfuhr erleichtert.

Dieser Hintergrund soll im Folgenden auf die Narration angewandt werden, nachdem *Sonnenallee* kurz zusammengefasst wird.

SONNENALLEE

Zusammenfassung

Michael Ehrenreich, sein bester Freund Mario und ihre Clique wohnen im östlichen Teil der Sonnenallee und stehen kurz vor dem Abitur. Im Mittelpunkt ihrer Interessen liegt die Frage des Dienstes bei der NVA sowie die größtenteils verbotene West-Pop- und Rockmusik der 1970er Jahre, und natürlich die erste Liebe. Während sie Anpassungsmanöver für die inneren Änderungen (Erwachsenwerden) entwickeln, kämpfen sie sich durch die äußeren Umstände (Leben in der DDR) durch. Dass Mario sich zur Stasi verpflichtet, weil seine Freundin schwanger ist, ist ein schwerer Schlag für Michael, der weiterhin um die Liebe von Miriam wirbt. In der Schlusszene betrachten beide Jungen den Mauerfall, der symbolisch auch das Ende ihrer Pubertät kennzeichnet.

Interpretation

Sonnenalle enthält viele Züge eines Pop-Films, da Westprodukte eine entscheidende Rolle wegen des DDR-Verbots spielen und zum Teil fetischisiert werden, insbesondere weil sie Begierdeobjekte dieser Teenager sind. Auf dieses Konsumierbare wird auch mittelbar das Freiheitsbedürfnis projiziert, das größtenteils die Pop-Kultur und ihre Vergänglichkeit kennzeichnet. Die innewohnende Subversion der Pubertätsphase beschränkt sich eher in der Anschaffung von Westprodukten seitens der Ostberliner. In dieser Entwicklungsperiode ist die Ahistorizität das wichtigste Moment, eben weil die hormonalen Schwankungen auf die Befriedigung der Bedürfnisse fokussieren und alles Andere außer Sicht lassen, wie wir es im Falle der Clique in *Sonnenalle* sehen. Allerdings wird das Zeitlose zugleich von der Rolle des DDR-Staates gestärkt, der als überfürsorglicher Vater das Leben seiner Kinder bzw. Bürger kontrolliert und ihnen bedingte Freiheiten erlaubt. Zudem wird anhand der Musik die Ahistorizität der Pop-Kultur sowie der Pubertät mit dem Zeitgeschehen verbunden, denn die Musik schlägt Brücken mit der Geschichte, wie in der letzten Filmszene dargestellt wird, wenn die DDR-Bürger sich tanzend in Richtung Mauer bewegen.

Musikgenuß und Triebbefriedigung sind die beiden Handlungsstränge von *Sonnenalle*, die zeitlose Merkmale aufweisen: sowohl Kunst als auch Sexualität prägen das Zeitbewusstsein auf unterschiedliche Weise: bei Kunststücken und insbesondere bei musikalischen Kompositionen werden Zeitkomponenten ausgelassen oder bleiben im Hintergrund, eben weil Kunst darauf

abzielt, den Rezipienten emotional oder geistig anzusprechen. Zeit als Bestandteil der Realitätswahrnehmung würde daher eher als Störfaktor funktionieren. Außerdem werden die Triebregungen in Musik sublimiert, d.h. in eine von der Gesellschaft hoch geschätzten Leistung umgewandelt. (11)

Musik ist also für die Clique von Michael das Mittel zur Triebabfuhr: nach dem ungelungenen Annäherungsversuch Michaels an Miriam, führen die Jungs alle zusammen eine Choreographie durch. Zudem kann behauptet werden, dass Musik halbwegs totemisiert wird, d.h. sie enthält existentielle Züge, indem sie einen besonderen Stellenwert zwischen Leben und Tod bekommt: Dies wird in der Szene mit dem kleinen Wuschel ersichtlich, als er erschossen wird und ihm die Schallplatte von Rolling Stones das Leben rettet.

Entstelltes Zeitbewusstsein

Das Intimitätsbedürfnis und der sexuelle Trieb Michaels entstellen sein Zeitbewusstsein aufgrund seiner emotionalen Betroffenheit: erst wenn die Wahrnehmungsfakten das Gefühl mit Dauer, d.h. mit biologischer Zeit versehen,“ (12) können sie existieren. Dadurch wird er auch zur Bewusstwerdung des Zeitgefühls gezwungen. Als Michaels instinktive Bedürfnisse ihn zur Entladung drängen, setzen sie in Gefahr die Autonomie, die Kohärenz oder die Integrität seines Selbstbildes. Während er versucht seine Instinkten zu befriedigen, entwickelt er das bestimmte lineare Bild von Zeit (Vergangenheit, Gegenwart, Zukunft), das zum grundlegenden Merkmal seiner Versuche wird, eine neue Sinnggebung bekommt und das Beweglichkeitsgefühl entwickelt. Nicht selten hat Michael den Eindruck, dass die Zeit erstarrt, was das Ergebnis seines verzweifelten Versuchs ist, die Integrität seiner inneren Welt von bedrohlichen, instinktiven, libidinösen oder aggressiven Impulse zu verteidigen. (13) Denn je stärker der Trieb ist, desto langsamer scheint die Zeit zu vergehen und umgekehrt. Das entstellte Zeitbewusstsein Michaels hindert ihn u.a. von dem Vollziehen seines Annäherungsversuch an Miriam, da für die diskontinuierlichen emotionalen Situationen das alles unifizierende Identitätsgefühl der Zeit erforderlich ist. (14)

Dieser Eindruck der Zeitlosigkeit wird auch durch den Alkoholkonsum auf der Party in Marios Wohnung verstärkt: Alkohol intensiviert die Erfahrung der äußerlichen Ereignisse und zugleich relativiert das Empfinden der psychischen Vorgänge wegen der Verlangsamung der biologischen Uhr. (15) Sobald der Rhythmus der innerpsychischen Abläufe beschleunigt wird, bekommt man das Gefühl, dass die Dauer der externen Uhrzeit verlängert wird. D.h. Michael und Mario nehmen die Geschehnisse in entstellender Weise in Bezug auf ihre Dauer wahr, als ob sie schneller stattfinden würden, während sie die Illusion hatten, dass die Zeit rapider vergeht. Beide scheinen der Abfolge der Geschehnisse nicht ganz folgen zu können, eben weil der Drogen- und Alkoholrausch ihr Zeitgefühl betäubt haben. Letzteres ist als Regelungselement grundlegend für die Konsolidierung des Bewusstseins, denn es verleiht Einheit zur Selbstwahrnehmung des Individuums in einer ständig sich verändernden Welt. (16)

Am Zeitpunkt des Tanzes von Michael und Wuschel am Ende des Films bekommt Ersterer das Gefühl der Ahistorizität, er verliert den Anschluss an die Realität, da seine Lustempfindung nicht mehr im Ausgleich mit seinem Zeitgefühl steht. In solchen außerordentlichen Situationen besteht die Möglichkeit des Überdeckens der Zeit durch die Lust bis zur einseitigen Eliminierung. Angesichts der Tatsache, dass grundlegend dafür die Persönlichkeitsintegrität und die Selbsteinschätzung des Gelingens der Person ist, (17) kann behauptet werden, dass Michael im Rausch seines Lustempfindens steht. Die erlebte Dauer dieser bestimmten Zeitspanne seitens Michaels hängt von dem Drängen der Triebe ab, (18) der beim Ich-orientierten Fluss der Zeit den Eindruck der Ewigkeit bekommt. Der Zusammenbruch der bisherigen staatlichen Ordnung am Moment des Mauerfalls wird Michael halbwegs oder gar nicht bewusst.

In der letzten Filmszene besteht auch die Berechtigung *Sonnenalle* als Wendefilm zu charakterisieren: Während wir das Leben von Michael, Mario und der anderen Jugendlichen beobachten, bildet der historische Rahmen des DDR-Lebens den Hintergrund ihres Erwachsenwerdens. Die Nachkriegszeit wird dermaßen reflektiert, dass die historischen Umstände ironisch-distanziert wiedergegeben werden. Sowohl der Staat als auch der Alltag in der DDR werden kritisch beschrieben; Der Umgang mit der Vergangenheit der DDR ist zunächst nur in der Form der Satire möglich, in der die wichtigsten Mythen der Wende ironisiert und mit dem Literatursystem des DDR-Staates abgerechnet wird. Die sarkastische Perspektive, mit der Haußmann sich der Vergangenheit nähert, erlaubt es, schonungslos auf die Missstände in der ehemaligen DDR zu verweisen. (19)

Die Handlung des Films strebt förmlich auf den Tag des Mauerfalls zu, der als friedliche Revolution tanzender Menschen wiedergegeben wird. Obwohl der Eindruck sich ergibt, dass dieses Happy End hinzugequatscht wurde, suggeriert der geschichtliche Ausgang auch das Ende der oberflächlichen pubertären Zeitauffassung und den Beginn des historischen Bewusstseins. Was danach kommt, wird nicht mehr erzählt, sondern gibt Anstoß an das Gedächtnis und die Erinnerung. Es gibt vielmehr eine Aufforderung an den Zuschauer, die Handlung weiterzudenken sowie sein intellektuelles und emotionales Potential zu aktivieren.

Filmrezeption: Ostalgie, Zeitbewusstsein und Katharsis

Aufschlussreich für die Filmrezeption ist das Verhältnis zwischen erzählter und erlebter Zeit (21): Die Ostalgie bietet den Rahmen für das entstellte Zeitbewusstsein der Helden an, denn es handelt sich eigentlich um die Sehnsucht nach der Frische und Unschuldigkeit der Pubertät, als die Triebregungen terra incognita waren. Diese Nostalgie war von den besonderen Konditionen des Lebens in Ostberlin und der folgenden sozialen und politischen Umständen beeinflusst und hat das pubertäre Zeitbewusstsein geprägt. Die Ostalgie wurde in Objekten der Pop-Kultur vergegenständlicht, die anhand der filmischen Gesetzmäßigkeiten symbolische Funktion übernommen haben. Indem auf die Gegenstände fokussiert wurde, ist die Distanzierung vom geschichtlichen Hintergrund zu Stande gekommen, die von den Konstitutionsmerkmalen der Komödie begünstigt wurde. Zu den Letzteren gehört auch die filmische Darstellung des verstümmelten Zeitbewusstseins. Da sie auf die traumhafte Verbildlichung des persönlichen Zeitempfindens als auch auf das historische Wissen beruht, ermöglichte sie das Zusammenspiel des Gedächtnisses und der Erinnerung. Die dadurch entstandene Spannung beruht auf die persönliche Erfahrung und die kollektive Sinngebung: als positiv empfundene Aspekte des Lebens in Ostberlin wurden von den politischen und geschichtlichen Umständen verschuldet. Auch im Falle der vollkommenen Abweisung des ostdeutschen Regimes entstehen persönliche oder soziale bzw. politische Sinngebungsfragen, die Schuldgefühle mit sich tragen. (20) Daher enthält die ostalgische Dimension ein gewisses Schuldpotential, das mittels der kathartischen Funktion der Komödie abgeführt wird. (22) Die Zuschauer können über die Abwehr- und Anpassungsmanöver an die hormonalen und politischen Abgänge erleichtert lachen.

Folglich begünstigen Wendefilme die Bewältigungsstrategien der Vergangenheit nicht nur seitens der Deutschen, sondern auch des internationalen Publikums, das sich auch im Rahmen der Probeidentifikationen mit den Filmhelden wegen des Wissens über die persönliche Entwicklung und den bekannten historischen Abgang angesprochen fühlt.

SCHLUSSFOLGERUNGEN

Folglich lässt sich schließen, dass die Zusammensetzung des individuellen Zeitbewusstseins Michaels und seiner Clique von ihrer Persönlichkeitsstruktur und Entwicklungsphase geprägt wird. Freilich soll der Beitrag des emotionalen Zustands besonders gewichtet werden, der auch

grundlegend für die Zeitauffassung ist. Davon werden Erinnerung und Gedächtnis beeinflusst und der geschichtlichen Gegenwart des Mauerfalls Inhalte zugeschrieben, die direkten oder indirekten Bezug auf die Vergangenheit aufweisen. Der historische Moment ist sowohl dem Gedächtnis, d.h. der öffentlichen Vergangenheit, als auch der Erinnerung, d.h. der privaten Vergangenheit ausgesetzt. „In der Vergangenheit, die alle zusammen haben, kann man herumgehen wie in einem Museum. Die eigene Vergangenheit ist nicht begehbar. Wir haben von ihr nur das, was sie von selbst preisgibt.“ (23)

Das Zusammenspiel zwischen persönlichen und kollektiven Mneme findet im Filmmedium unter den Gesetzmäßigkeiten der Komödie und der Wendefilme einen besonders gelungenen Niederschlag. Zufällig ist die Auswahl dieser Genre jedoch nicht: nur dadurch käme die Visualisierung des enstellten Zeitbewusstseins der Jugendlichen zu Stande. Während diese optische Darstellung des Lebens in Ostberlin „einen Verständnishorizont darstellt, auf dessen Grundlage die Dinge in der Welt erst sinnhafte Bezüge zwischen einander ausbilden können“ (24), trägt sie kathartische Funktion mit sich: den Rezipienten wird der museale Umgang mit der Vergangenheit ermöglicht, wodurch sie distanziert mit der Ostalgie umgehen können. Auf diese Weise sind sie in der Lage anhand des Films eine neue Bewältigungsstrategie zu entwickeln.

Natürlich ist der Mauerfall als Gedächtnismoment Forschungsgegenstand der Historiker. Jedoch besteht auch das Bedürfnis die Erinnerung zu historisieren, wie es in diesem Wendefilm dargestellt wird. Im Medium des Films werden die verschiedenen Ausdrucksmöglichkeiten der Zeit und der Geschichte sichtbar, aber vor allem kommt immer wieder zum Vorschein, dass Zeit eine Modalität des Bewusstseins ist, die in engem Zusammenhang mit dem Gedächtnis steht. (25)

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