

Economic Letter



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Trends and Issues¹

1. Growth Triangles' Role in Eastern Integration

It is worth examining development in our countries due to their unique conditions, recurrent crises, and distinct formation. In the past century, the demarcation of the region's national borders didn't align with the economic boundaries required for development. This has rendered integration and the strengthening of ties among countries an essential lifeline to attain a minimum threshold of prosperity. It is worth noting that the political regimes of these countries have hindered development. They have either relied on centralized and rent-seeking institutions, which discourage incentives for production, or have adopted decentralization that has been almost chaotic. In broad terms, the political and economic history of the region, combined with significant external intervention, have played a role in undermining national-level development endeavors. Consequently, regional cooperation founded on integration serves as a "gateway" to escape the one-way dependency situation² and to move away from the state of underdevelopment despite abundant human and material resources.

Nonetheless, the integration path is fraught with formidable challenges and obstacles that prove arduous to surmount. Integration means a comprehensive and structured economic fusion between two or more economies. Arab nations have undertaken this experience following their independence. They paved it with legal and institutional measures as well as agreements and treaties. However, they failed to provide a satisfactory outcome. This can be attributed, in part, to the lack of consensus on undertaking major joint projects in vital sectors, prioritizing political disputes over economic interests, and placing partnership steps on a politically conflict-ridden path, unlike the Asian model, where economic cooperation initiatives were detached from political implications (as demonstrated by China and India's participation within the Shanghai Cooperation Organization and BRICS). However, the efforts of the Arab Facilitation Agreement to establish an Arab Free Economic Zone did not yield a favorable impact on enhancing the proportion of intra-regional trade to total international trade. Moreover, there is limited substantiation of significant enhancements in

outcomes for participating member countries. Also, that progress toward establishing a common market has not been initiated yet.

The nations of the region lack a main requirement for achieving successful macro-level integration, which is reaching or even approaching the maturity stage in the development ladder. While numerous Arab countries tied their integration in the previous century with ambitious well-balanced growth strategies involving substantial investments to provide a big push to the economy, partial sectoral and regional integration aligns more closely with unbalanced growth strategies, which are apt for nations struggling with economic challenges. This approach is congruent with countries that lack a robust political foundation for establishing comprehensive partnerships or have variations in development levels and income.

One prominent application of partial integration strategies is exemplified by 'Growth Triangles,' which has yielded positive outcomes in various areas worldwide, particularly in Southeast Asia. This model is rooted in diverse developmental approaches. In addition to the previously mentioned strategy of unbalanced development that excludes specific sectors and regions, the notion of 'Growth Poles,' as introduced by the French economist François Perroux, highlights the diffusion of development benefits from centers to peripheries. This is an acknowledgment of the inherent inequality and imbalance of growth, which tends to originate from regions distinguished by population density, materials, and human resources, as well as an advanced infrastructure capable of attracting industries and new ventures. Consequently, these dynamic fosters economic activity in the surrounding areas. The presence of Growth Triangles extends economic effects beyond borders, maximizing the impact of development policies in neighboring countries.

1. Characteristics of Growth Triangles

Growth Triangles encompass sub-national economic regions that span both urban and rural areas across three or more neighboring countries, distinguished by their diverse array of resources and advantages. The term 'Growth Triangles' was initially introduced by the Prime Minister of Singapore in 1989 to denote economic collaboration among specific geographical

¹ This English version of Economic Letter exclusively comprises the translation of first section of the Arabic version under name "Trends and Issues". This section encompasses studies and reports prepared by the Consultative Center for Studies and Documentation.

² A situation where one region or country is excessively reliant on another, leading to a one-sided dependence that can be detrimental.



regions, including his country, Indonesia, Hong Kong, and China. However, the notion of Growth Triangles predates this specific instance and has been extensively applied across Asia³, assuming a crucial role in expediting growth, facilitating trade, and enhancing the efficient utilization of indigenous resources.

Growth triangles emerge from the interaction of two forces: regional economic cooperation and a substantial influx of direct investment. Its benefits include the expansion of market scope, the optimization of value addition through integrated production and interlinked value chains, the utilization of economies of scale to foster competitive advantage, and cost reduction. Nevertheless, they do come with certain disadvantages, including wage disparities, potential exacerbation of domestic development inequalities, and intensified competition for foreign direct investment both at inter-country and intra-country levels.

Integration within Growth Triangles is rooted in disparities between the economic development stages of the involved parties and differences in production factors among the triangle's regions. This diversity, rather than similarity, is pivotal to their success. For instance, the Growth Triangle involving Singapore, Indonesia, and Malaysia was propelled by factors such as labor-intensive industries in Singapore, a young and surplus workforce in Indonesia, and abundant water resources in Malaysia. The geographical proximity of regions within Growth Triangles is vital to facilitate the

movement of production factors and achieve market unity, as well as, a strong political commitment for overcoming obstacles and enforcing pertinent policies, laws, and measures. These efforts may encounter internal resistance, such as tariffs, labor market regulations, financing, investment, and exchange rates.

Investment in infrastructure occupies a pivotal role within Growth Triangles. As sub-regional cooperation endeavors often aim to amplify project efficiency and foster collective utilization of natural resources, the focus extends to sectors like transportation, communication networks, and water resources. This concept is occasionally referred to as "five openings and one leveling," signifying the accessibility of water supplies, energy, roads, and communications to the business sector and other stakeholders, while also permitting land investment for construction purposes. Along with geographical proximity and shared developmental interests, cultural and ethnic affinities emerge as significant drivers for reinforcing opportunities in cross-border cooperation.

In summary, the factors that shape the formation of Growth Triangles can be categorized into two distinct groups: the first group is propelled by disparities and variations, encompassing comparative advantages, existing resources, pricing dynamics, and levels of advancement. The second group emerges from commonalities and spatial proximity, encompassing geographical linkages, cultural affinities, shared identities, and strong political commitment.

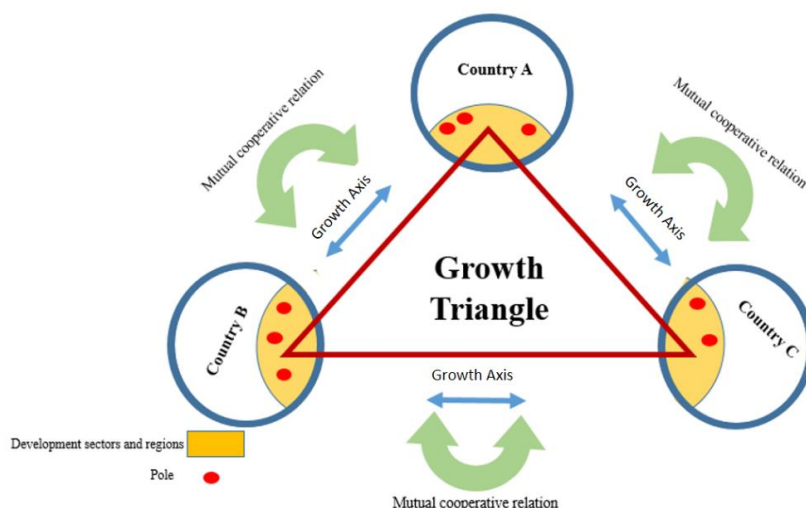


Figure 1: Concept of Growth Triangle

³ Among the Asian triangles: a triangle that includes provinces in China, Russia, and North Korea, another that includes the provinces of northern Malaysia, northern Sumatra, and southern Thailand, and the eastern ASEAN growth triangle that includes Mindau in the Philippines, Silauzi in Indonesia, and Shan Kaan in Malaysia. There

is a triangle that includes regions in Indonesia and Singapore, and another between Indonesia, Malaysia and Thailand. For more see: Ming Tang and Mayo Thant; Growth Triangles: Conceptual Issues and Operational Problems; Staff Paper No. 54; Feb 1994; Philippines: Asia Development Bank.



2. Integration Options

The attainment of successful complete economic integration between two or more countries is tied intricately to the economic development level of the region. As this level increases, the probability of integration accomplishing its objectives and yielding significant impacts also rises. The "Regional Integration Evaluation Methodology (RIE)," introduced and published by the Asian Development Bank in 2010⁴, embodies this notion by utilizing primary and secondary quantitative indicators.

The methodology comprises four stages: The first stage involves compiling a comprehensive and versatile database on the region under examination.

In the second stage, the four comprehensive regional development indicators are measured by: political development (X1), social development (X2), economic development (X3), and technological development (X4) noting that each indicator encompasses a set of sub-variables⁵.

The third stage entails measuring the Comprehensive Regional Development Index (RGD), which is calculated through the summation of values resulting from the multiplication of successive paired variables positioned on both horizontal and vertical axes (X1, X2), (X2, X3), (X3, X4), and (X4, X1).

Lastly, the fourth stage involves measuring the Regional Integration Score (RIS), computed as the arithmetic average of the four development indicators.

When applying this methodology to the Eastern Mediterranean region, which includes Lebanon, Syria, and Iraq, the resultant Regional Integration Score (RIS) would likely be low due to the underdeveloped pillars of development in the region. This scenario mirrors the situation observed in countries within the Association of Southeast Asian Nations (ASEAN), where the integration index is roughly half that of the European Union (EU). It is noteworthy that the ASEAN index experienced an increase from 30 in the 1980s to 41 in the first decade of the new millennium, attributed to improved development conditions. In contrast, the EU index witnessed a decrease from 83 to 78 in both periods following the accession of countries with lower levels of development, such as Cyprus, Eastern European, and Baltic countries. In contrast to complete integration among countries, which requires

economic progress and developmental convergence, the rationale behind creating Growth Triangles lies in disparities in development, income, resources, and areas of interest among the regions involved. Thus, the prospects for partial integration within the mentioned Eastern Mediterranean context are more realistic compared to complete integration.

Regional analysis of the potential for establishing Growth Triangles relies on several factors, including: the presence of central poles with the ability to transfer growth effects to secondary poles and neighboring areas, efficient infrastructure networks, and a history of trade and economic relations among populations, facilitating adaptation to changes resulting from connecting regions.

From a theoretical perspective, Lebanon's sphere of integration can be delineated into five concentric circles: the initial circle encompassing the Arab East nations (Iraq, Syria, Jordan), followed by the addition of Egypt and the Gulf countries in the second circle, Iran and Turkey in the third, extending to the Mediterranean and Asian regions in the fourth, and ultimately encompassing the global arena in the fifth.

However, Lebanon's practical realm of integration is predominantly shaped by countries that persist in boycotting their adversary and decline involvement in a normalization agenda that seeks to intertwine regional interests with "Israel." Consequently, Syria and Iraq emerge as pivotal geo-economic partners for Lebanon, functioning as crucial Mediterranean gateways to the Arab countries and ambitious Asian initiatives.

3. Comparison of Advantages

In terms of methodology, the examination of Growth Triangles should not be limited solely to the potential regions involved but should expand its scope to encompass the comparative advantages of the entire economy, from which specific regional benefits within each country arise. This holds notable importance for Lebanon, especially considering the hurdles, impediments, and sanctions that have hindered collaborative endeavors and partnership initiatives with Arab nations.

The strategy of self-discovery to identify advantages is arguably a more favorable approach for uncovering the inherent potentials within Growth Triangles. This method entails structuring development plans

⁴ Donghyun Park and Mario Arturo Ruiz Estrada; A Multi-dimensional Framework for Analyzing Regional Integration Evaluation (RIE) Methodology; Asian Development Bank ADB; ADB Working Paper Series on Regional Economic Integration; No 49.

⁵ These indicators are determined based on the PESTEL planning model, which includes two additional indicators related to the environment and the law.



around successful achievements realized by innovators, entrepreneurs, and pioneers of new technologies. This approach is an alternative to the conventional method, which identifies advantages relying on estimations by researchers and planners, employing intricate tools and techniques guided by assumptions they formulate independently.

In this context, studies that analyze the strengths of the Lebanese economy underscore its competitive advantages in knowledge-intensive sectors, agricultural manufacturing, diverse domestic tourism, and chemical industries. Lebanon demonstrates excellence in education, healthcare services, and marketing skills, positioning it as a potential hub for medical tourism, regional creativity, innovative food industries, and the production of advanced construction materials and consumer goods. While the current crisis raises uncertainty about the sustainability of these advantages, the utilization of the self-discovery approach continues to highlight competitive strengths in software development, advertising, engineering, and the food industry. Initial observations also indicate an uptick in investment values within animal production, pharmaceuticals, and specific construction materials. Furthermore, significant investments in solar energy systems have contributed to the emergence of an additional advantage that has the potential to develop further with time.

On the contrary, prior to the war, Syria possessed notable competitive advantages, particularly in agriculture, which constituted approximately 20% of its output or GDP, and the petroleum sector. Industries also held a significant share of the Gross Domestic Product, accounting for 23.2% in 2011. The industrial landscape in Syria's investment sphere was characterized by a robust presence of the public sector, which oversaw approximately 40% of industrial establishments, while the private sector managed the remaining portion. Traditional methods were employed in various Syrian industries, including textiles, food, and cement. Moreover, there was a noticeable emergence of medium and high technologies in sectors such as pharmaceuticals, electrical and electronic devices, and automobile assembly, catering to the domestic market.

The Syrian economy capitalized on its relatively low wages, strategic geographical location, and the availability of certain natural resources. However, its potential competitive advantages related to innovation and renewal remained largely untapped. As a result, Syria exhibited a comparatively weaker capacity than its neighboring countries to attract foreign direct investments, amounting to around 10.3

billion dollars in 2011. In contrast, Lebanon attracted 40.6 billion dollars, Tunisia received 31.4 billion dollars, and Jordan garnered 23.4 billion dollars. Notably, the share of investment in the industrial sector was higher in Syria compared to Lebanon.

It can be contended that Syria possesses a competitive advantage in intermediate technology fields and labor-intensive sectors. Despite witnessing improvements in the educational attainment of its workforce, the proportion of university graduates remains lower in Syria compared to pre-crisis Lebanon (6% in Syria compared to around 20.1% in Lebanon). The Syrian public sector has played a role in advancing certain critical industries, including pharmaceuticals and chemicals, as well as the extractive sector, which experienced a decline in returns following the war.

On the other hand, Lebanon presents promising opportunities in innovative initiatives embraced by start-ups and boasts a distinct edge in knowledge-based activities and skilled labor, despite its financial crisis and policy constraints. This is evident in Lebanon's superior performance over Syria (pre-war) in innovation indices (ranked 61st globally for Lebanon and 132nd for Syria) and in human development (ranked 93rd compared to 119th, with an index value of 0.73 compared to 0.63). Lebanon also significantly outperforms Syria in technological readiness indicators, including quality of education (ranked 12th for Lebanon and 96th for Syria), quality of math and science education (ranked 6th compared to 62nd), quality of schools and management colleges (ranked 18th compared to 108th), and research and training (ranked 54th compared to 110th).

However, Lebanon's vulnerabilities in the public sector are evident in the decline of infrastructure quality indices in roads (ranked 115th for Lebanon and 68th for Syria) and energy (141st compared to 92nd). Despite this, Lebanon makes progress in semi-privatized sectors such as ports (ranked 62nd for Lebanon compared to 112th for Syria) and aviation (43rd compared to 125th). Notably, Syria surpasses Lebanon by three ranks in the field of logistics performance.

The competitive factors in Iraq primarily revolve around the oil sector, while latent potential exists in areas such as finance, energy, and to some extent, extensive agriculture and heavy basic industries. Iraq's relative advantages, stemming from its geographical location and abundant natural resources, are closely aligned with its competitive attributes, which are delineated based on production dynamics, human inputs, and knowledge. This is evident from the significant contribution of oil to its



domestic output (42.9% in 2020). In contrast, transformative industries constitute less than 1.3% of its output, agriculture accounts for approximately 4.7%, and transportation and communication make up 8.4%. These figures underscore Iraq's economic reliance on primary materials and local resources that lack international exchangeability.

Consequently, a robust foundation exists for fostering collaboration among the three Arab East nations, underpinned by shared attributes such as political will, geographical proximity, historical bonds, and the interplay of disparities encapsulated in diverse comparative and competitive strengths, along with varying degrees of development reflected in average per capita income (which was twice as high in Lebanon compared to Syria and Iraq before the Syrian conflict). Embracing the integration prospect amplifies its significance and viability, particularly in its potential to play a constructive role in alleviating the repercussions of sanctions and counteracting some of the impacts of the Caesar Act, which obstructs Syria's reconstruction and adversely affects the economic dynamics of neighboring nations.

Furthermore, other supportive elements for integration include geographic diversity. Iraq overlooks the Gulf and shares a lengthy border with Iran, positioning it as the easiest conduit to the region. Lebanon's coastlines possess various locational advantages for central Syria, its south, Jordan, central and southern Iraq. The geographical diversity paves the way for balanced reciprocal interdependence among the three countries, facilitating transit between the Mediterranean shores on the one hand, and the Gulf and Asia on the other hand. This strategic alignment has attracted the attention of states demanding normalization with "Israel", evident in discussions about connecting the Jebel Ali Port with the port of Haifa, opposite the development road that connects the port of Faw to the eastern coast of the Mediterranean in Syria and Lebanon.

In parallel two Asian projects are competing to benefit from the vital location of the Gulf and the Arab Levant. The first is China's Belt and Road Initiative (BRI), encompassing both a land and maritime component, aiming to connect global nations through extensive infrastructure investments (estimated at 26 trillion dollars until 2030), with plans projected to complete in 2049. About half of BRI's routes traverse the Gulf and Arab

Levant region, prompting Beijing to bolster its relations and partnerships with the region's countries, particularly investing in maritime transportation lines and the Gulf's ports.

The United States of America is countering Chinese expansion in the region through a second project designed to connect India with the Middle East and the Levant. This initiative involves utilizing Gulf ports and a network of railways that traverse regional countries and extend to the Mediterranean shores. In May 2023, discussions regarding this project took place between Washington, Saudi Arabia, India, and the UAE. The conceptualization of this project originated from "Israel", which introduced the idea at the I2U2 Forum (established in 2021 and comprising "Israel", India, the UAE, and the United States). The underlying objective is to enhance the positioning of the nation on the global trade map. Notably, in February 2022, the UAE entered into a strategic partnership agreement with India, with the aim of significantly boosting bilateral trade activities. This collaborative effort encompasses ambitious ventures, including the construction of a high-speed underwater train connecting the emirate of Fujairah with Mumbai.

4. Charting the Path to Growth Triangles in the Arab Levant

According to the Comprehensive Plan for Lebanese Territory Arrangement, Lebanon comprises four population clusters⁶: the central metropolitan area in Beirut and Mount Lebanon, the northern capital, the major settlements in the Beqaa (Zahle-Shatoura-Baalbek axis), and the south (Sidon, Tyre, Nabatieh). Within this framework, the plan proposes an urban structure across Lebanese territories, encompassing Greater Beirut, cities/crossings (Jbeil, Sidon), the northern capital and its suburbs, equilibrium poles within (Zahle, Shatoura, Nabatieh), and significant heritage cities (Tyre, Baalbek). These poles, based on their economic advantages, serve as catalysts for development radiating from main centers to dozens of secondary poles and surrounding rural areas (Hermel, Labweh, Deir Al-Ahmar, Riyaq, Jabal Jenin... Hasbaya, Marjayoun, Khiyam, Jezzine, Jwayya, Qana, Bint Jbeil, Tebnine... Batroun, Tannourine Al-Tahta, Ehden, Zgharta, Qoubaiyat, Shadra...).

Frequently, the economic functions assigned to growth poles extend beyond Lebanese borders. The proposed development of Tripoli's port is a strategic

⁶ Presiding over the Lebanese government; The Comprehensive Plan for the Arrangement of the Lebanese Territories - Final Report; Beirut: Council for Development and Reconstruction; November 2005.



choice aimed at gaining priority in facilitating cargo transit and transshipment between Syria and Iraq, facilitated by a railway line. Similarly, the equilibrium pole (Zahle-Shatoura) could host a modern industrial region effectively linked to a road and rail network heading towards Damascus, serving as an investment attraction and circumventing sanctions.

In the same context, Nabatieh is expected to acquire new functions, elevating it to a central pole, and creating a service and logistics extension for the industrial zone along the Gazieh-Zahle axis. Its exceptional location on a potential transit line between the Mediterranean coast and the Arab interior of Syria and Jordan may be realized with the establishment of a specialized port south of Sidon (Zahrani). Adjacent to this region is southern Syrian territory, where some studies ⁷ envision a development area (comprising Sweida, Daraa, and Quneitra), covering about 6% of Syrian land and hosting around 15% of its (pre-war) population. These characteristics pave the way for a cross-border growth triangle encompassing Lebanon-Syria, and Syria-Iraq-Jordan, evolving into an economic hub (with regional and global extensions) after overcoming current crises, endowed with substantial agricultural, industrial, and artisanal potential. Its geographical position straddling four countries positions it to potentially house a supportive service and logistics base for Syria's reconstruction efforts.

In general, the available capacities within the Levantine triangles should be integrated. Syrian potential in consumer and chemical industries should be combined with Lebanon's strengths in technology and information, as well as expertise in the food sector. Furthermore, disparities in infrastructure quality between the two nations should be leveraged. Lebanon could benefit from Syrian advantages in energy, water, and road sectors, while Syria could capitalize on Lebanon's air and sea transport superiority. In any potential task distribution, the Lebanese private sector and the Syrian public sector should be harnessed, designing joint projects with the purpose of retaining Lebanese expertise, absorbing labor market surpluses in both nations and creating a refuge for migrating Syrian industrial experience.

Additionally, closer ties between the tourism regions in the three countries should be considered. These regions can accommodate unified service packages at reduced costs, catering to various forms of tourism (religious, ecological, cultural, family, entertainment),

maximizing benefits from differing price structures and production costs in the three nations.

5. Three Suggested Growth Axes:

In the analysis above, we adopt an approach that sees integration between sub-regions in Lebanon, Syria, and Iraq as more realistic and feasible than overall integration. Development disparities, resource differences, and economic capabilities enhance the prospects of establishing growth triangles while playing a counteractive role in complete regional integration, which remains a long-term desired option, albeit fraught with numerous challenges and obstacles on the horizon.

Defining growth triangles in the Levantine context necessitates in-depth studies and detailed analyses of resources and potentials across all regions and provinces of these countries. It also requires awaiting the resolution of crises, tensions, and current foreign policies that hinder the development of public policies and joint strategies in the region. Nonetheless, we can derive initial insights from the preliminary survey above to identify key geographical axes where growth triangles are likely to emerge.

In selecting the following three axes, we have considered five criteria: the presence of at least one maritime gateway, the potential for a well-developed land transport system supported by railways, proximity to major population centers as both a labor pool and a market for goods, abundant natural resources and energy sources, and possession of productive pillars capable of attracting investments. The axes are as follows:

1. Zahrani/Nabatieh/Southern Syria Axis extending to the Arab countries: This axis boasts a strategic position, featuring a pivotal Mediterranean outlet (Port of Zahrani) suitable for goods transit inland and cost-effective reconstruction support for Syria. Additionally, it has the capacity to host advanced service areas capable of accommodating modern technology and diverse experienced labor forces. This axis could also host shared industrial zones between Lebanon and Syria while benefiting from competitive energy supplies from Iraq. The establishment of oil refineries and gas liquefaction plants along Lebanon's southern coast, especially if oil is discovered in Block 9, bordering occupied Palestine, could significantly affect the economic competitiveness of this axis.

⁷ Reham Fakhoury and Rola Mia; growth triangles strategy; Riyadh: Journal of Architecture and Planning; vol.26; 2014-1435; pp.: 25-59.



2. The Capitals' Line Axis: This axis connects Beirut, Damascus, and Baghdad, passing through Baalbek-Zahle and extending into central and southern Iraq. It holds substantial resources and potential in cargo and passenger transportation. Strengthening connectivity between these three capitals would reduce transport costs, enabling the establishment of an integrated tourism and trade corridor. Enhancing port activities, transit movement, tourism, and financial services across the regions of this axis in proportion to their characteristics and advantages could result in pivotal roles for the three countries in Asian economic projects.

3. Tripoli and Hermel Axis: This axis encompasses parts of northern Syria and Iraq, extending towards the Gulf. The region hosts promising industrial, agricultural, and service capacities, facilitating Lebanon's connection to development pathways in Syria. It includes the port of Tripoli, which, with enhancements, could serve areas in northern Syria and Iraq, including central regions, as well as reaching the Gulf through the newly developed Al-Faw port. Shared maritime transport networks could be established, linking Tripoli Port with Latakia and

Tartous ports. Moreover, this axis has the potential to absorb migrating industrial investments from Aleppo, which once hosted a considerable industrial sector.

In conclusion, the initial analysis highlights the advantages that can be gained from growth triangles as drivers of national and regional development. The aforementioned axes hold promising potential for integration, potentially generating additional returns compared to the current state by linking production chains. However, a comprehensive and detailed technical analysis is required to determine the economic and geographical scopes of cross-border growth triangles. This should be based on a holistic vision for overall economic cooperation and large joint projects, coupled with a forward-looking perspective on the position of the Levant countries amid global economic transformations. The aspiration is for the region to become an attractive point for Asian investments in infrastructure, necessitating expanded intercountry cooperation and deepened interconnectivity among their sectors, particularly those gaining high geo-economic value in the intense global competition.



Figure 2: Growth Axis



2. Petroleum Sector: Recent Developments and Proposed Pillars for a National Strategy

Section One: Current State of the Petroleum Sector

1. Recent Developments in the Lebanese Petroleum Sector:

After years of indirect negotiations marked by significant procrastination, stalling, delay, and disregard, a series of events transpired that enabled neighboring nations and entities, notably the Zionist entity, Cyprus, and Egypt, to establish their foothold in global energy markets. Lebanon and occupied Palestine delineated their maritime borders in October 2022 against the backdrop of a declaration by the Islamic resistance that threatened to target "Israeli" platforms if extraction activities began in disputed areas without an agreement. These developments coincided with the growing interest and competition among Western nations to secure alternative sources of natural gas, particularly following the sanctions imposed on Russian energy supplies within the context of the Russo-Atlantic struggle over the Ukrainian arena. As a result, Lebanon acquires the capacity, facilitated by foreign companies, to undertake prompt exploration and exploitation activities, notably in Block 9, housing the "Qana" field, which Lebanon now rightfully owns. Nevertheless, the agreement mandates restitution to the "Israeli" side from the shares of operating companies granted exploration and exploitation rights in this region, given that a portion of the "Qana" field extends beyond Lebanese territorial waters.

Notably, in November 2022, French company Total Energy and Italian company Eni announced a framework agreement with "Israel". This agreement stipulates that the former would allocate 17% of its field revenues to the latter as compensation.

Notably, the local petroleum sector has undergone significant developments since 2018, gaining momentum due to a multifaceted and unprecedented economic, financial, and monetary crisis as well as the repercussions of the Ukrainian conflict. Amidst these circumstances, there is growing anticipation and renewed optimism that oil resources could offer a viable solution for the crisis and pave the way for a more prosperous economic future. Some of the key developments include:

- The signing of the Exploration and Production Agreement (EPA) for blocks No. 4 and 9 on January

29, 2018. The distribution of shares among the participating companies was as follows: 40% for Total (French), 40% for Eni (Italian), and 20% for Novatek (Russian).

- The cessation of drilling activities for the first exploration well in Block No. 4, were without publishing a comprehensive final report. This departure from fundamental governance norms in the sector raised concerns. Nevertheless, preliminary results disclosed by the Minister of Energy in April 2020 indicated the presence of gas in various depths within the geological layers near the Lebanese coast (Basin margin area). However, these findings did not confirm the existence of a gas reservoir.
- On January 29, 2023, two amending annexes were signed to the exploration and production agreements for Blocks 4 and 9. This allowed Qatar Energy to replace Novatek, the Russian company. The revised consortium structure is now as follows: 35% Total Energy, 35% Eni, and 30% Qatar Energy.
- In February 2023, the vessel "Janus 2" completed an environmental survey of the Exploration and Production area in Block No. 9, as mandated by the Exploration and Production Agreement.
- A comprehensive study on the environmental impact of exploratory drilling for oil and gas in Block No. 9 was concluded and published on the Ministry of Environment's official page in May 2023.
- A contract was signed between the consortium of the three companies and Transocean Barents in May 2023, securing the rental of a drilling rig. The drilling rig's current operations in the North Sea are about to be finished at the beginning of August. Subsequently, it will sail to Lebanon to commence drilling activities in Block No. 9, scheduled to begin in early September. Results from the drilling and exploration efforts anticipated to be announced by year end (according to the Minister of Energy and Water).
- The deadline for submitting applications to participate in the second licensing round for offshore oil and gas exploration was initially set for June 30, 2023. This round specifically pertains to the remaining blocks (1, 2, 3, 5, 6, 7, 8, and 10). The submission deadline has been extended until October 2 following a decision by the Minister of Energy and Water, based on a recommendation from the Lebanese Petroleum Administration (LPA). The applications remain valid for a period of 180 days from the extended submission deadline. During this period, the Lebanese Petroleum Administration (LPA) will assess the applications



and present them to the Minister of Energy and Water. Subsequent negotiations with the companies will take place according to terms outlined in the Exploration and Production Agreement. Ultimately, the results will be submitted to the Council of Ministers, which holds discretionary authority to grant licenses and approve agreements based on the Minister's proposal and the LPA's recommendation. However, there is a concern that constitutional and legal impediments may pose challenges to the progress of these developments. This concern is heightened by the intricate political and administrative landscape currently faced by Lebanon. The presidency remains vacant, leaving a void in the leadership of the republic. Additionally, a fully empowered council of ministers is lacking, with a caretaker council temporarily assuming responsibilities. Complicating matters further, the regulatory body responsible for overseeing these initiatives has been in a state of expiration since 2018, compounded by the resignation of two out of its six members. These circumstances collectively create an environment of uncertainty and potential obstacles, casting doubt on the seamless advancement of the country's oil sector goals.

- The Sovereign Fund draft law has reached an advanced stage of completion within the parliamentary committees, to be presented to the General Assembly of Parliament for approval later. It's worth noting, however, that the final version of this law remains subject to ambiguity and uncertainty due to the extensive number of amendments it has undergone.
- In March of this year, the Minister of Public Works and Transport announced the allocation of a 34,000 square meter area within the port of Beirut, constituting 2.8% of the total port space, exclusively for logistical services related to petroleum activities. This designated space will be a berth for oil and gas exploration activities under licenses granted by the Ministry to operating companies. Nonetheless, there are certain considerations that may need to be addressed with regard to this initiative, including:
 - The state's share of the surface fee as an annual lump-sum fee, typically progressive over the years. This fee is paid by operating companies for the areas they utilize for their petroleum activities.
 - It is unclear whether this initiative fully considers the studies and plans conducted by international organizations such as the World Bank and ESCWA (Economic and Social Commission for Western Asia) concerning the reorganization of port land

activities and uses within the context of the port's reconstruction.

- How will the relationship between the operating companies and the diverse civil and military port administration authorities be structured? This inquiry could potentially be resolved by formulating new legislation to govern the management of the port sector along the Lebanese coastline. This is particularly crucial due to the absence of an effective, centralized port authority on one hand and the overlapping of mandates among various supervising departments, organizations, and agencies related to transportation, trade, storage, shipping, and border control, leading to widespread negligence, favoritism, a deficiency in accountability, and a lack of transparency on the other.

Nevertheless, this initiative constitutes an important step in the right direction in enhancing the local content of the oil industry. As linking the granting of permits, licenses, and facilities, especially the movement of workers and the import of equipment and machinery necessary for the activity of exploration companies in Lebanese waters, to giving preference to Lebanese ports in providing logistical services for drilling and exploration platforms helps achieve the aforementioned goal. This is apart from the sovereignty consideration that requires Lebanon to adhere to this right.

2. Developments in the Regional Natural Gas Market

The timeline of Lebanon's actions appears to be lagging behind regional advancements, particularly concerning the natural gas landscape. The following facts underscore this point:

1. The intensification of efforts to strengthen economic ties between Egypt and the "Israeli" entity has enabled both parties to expand their sphere of influence to encompass other regions and countries, as detailed below.

The "Israeli" entity currently supplies Egypt with approximately 5 billion cubic meters of natural gas annually, delivered through subsea pipelines extending to the Sinai Peninsula. Plans are underway to increase these supplies to about 8 billion cubic meters annually, contingent upon the completion of a new overland gas pipeline spanning 65 kilometers, a project estimated at \$248 million. Approval for this project was granted by the "Israeli" government in May of this year.



2. The establishment of the Eastern Mediterranean Gas Forum in January 2019 represents a significant geo-economic consortium comprising Egypt, Greece, Jordan, the Palestinian Authority, and Italy. The “Israeli” entity plays a pivotal role in as a leading supplier of natural gas, notably to Egypt, Jordan, and the Palestinian Authority. Infrastructure development is in progress to facilitate the transportation of this gas to European nations, probably via maritime vessels. This likelihood has grown more apparent following the signing of a trilateral agreement in June 2022 between the European Union, the “Israel”, and Egypt, aiming to transport “Israeli” gas to the European market after liquefaction at the Egyptian Idku and Damietta facilities as a partial offset to the reduced supply of Russian gas.

3. Initial Assessment of Local Progress

The developments within Lebanon's oil sector indicate that the nation has embarked on its initial strides along the intricate and extensive journey of the oil industry, particularly within the inaugural phase of the comprehensive phases encompassing this industry. The petroleum industry conventionally comprises three fundamental phases:

Upstream Phase: It encompasses oil and gas exploration, development, and production activities. This phase necessitates substantial capital investments, sophisticated production methodologies that are both technically and

technologically intricate and a workforce replete with highly specialized expertise. A distinguishing characteristic of this phase is its high-risk factor, especially when exploration and exploitation efforts yield non-commercial quantities, in other words, quantities whose commercial value fails to offset the substantial extraction expenses. Frequently, operations within this phase are outsourced to multinational corporations or consortia of companies.

Midstream Phase: This phase covers the transportation, storage, and trading of crude oil, natural gas, and refined products, as well as, facilities like liquefied natural gas (LNG) plants and regasification terminals. Establishing an integrated infrastructure within this phase requires substantial investments, including a network of pipelines linking fields to storage and treatment facilities, specialized ports outfitted with facilities for processing and storing various oil derivatives, pumping stations, cranes, and a diverse array of pipelines.

Downstream Phase: This involves refining and the subsequent distribution of products for final consumption. Such activities entail establishing strategically located refining facilities, along with an extensive network of roadways and railways for transporting crude oil to processing and refining facilities, and subsequently onward to distribution hubs for ultimate consumption. These operations hinge on intricate networks of pipelines, storage tanks, containers, and associated infrastructure.

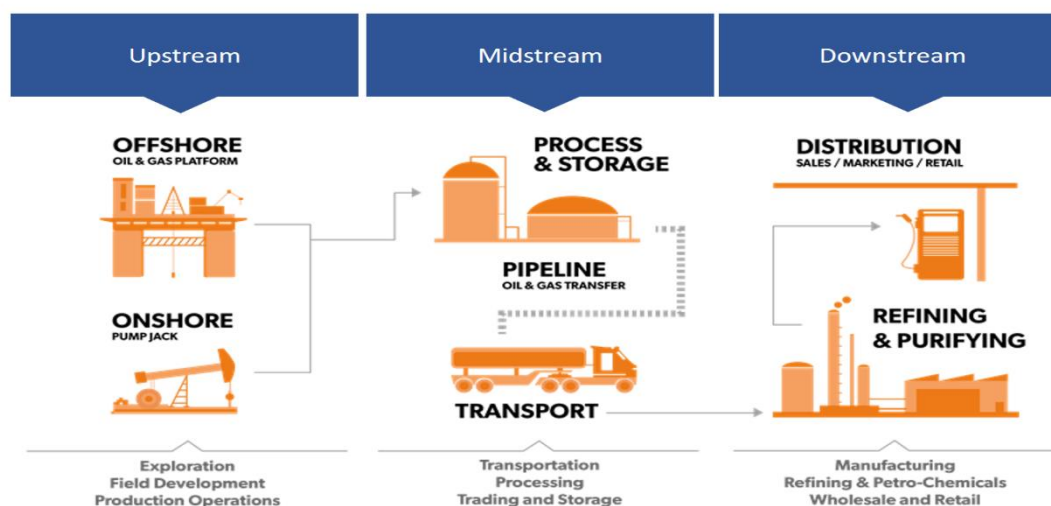


Figure 1: Petroleum industry Phases



Certainly, the observations we've highlighted underscore some significant constants that govern Lebanon's oil industry endeavors. Let's delve into these key points:

Firstly, Lebanon remains significantly lagging behind in the realm of the oil industry. Neighboring nations, including entities like "Israel", Cyprus, and Egypt, have made substantial advancements in the petroleum industry, effectively establishing their presence within the energy markets. Moreover, they are actively seeking to secure expanding portions of these markets, whether regional, European, or international, as mentioned earlier. In contrast, Lebanon has not yet embarked on its initial endeavors in exploration and exploitation activities. These activities require a long time, especially since the time factor is not in the interest of Lebanon, which will have to wait at least five years, with the likelihood of being extended more, to join the natural gas-producing countries. And this is if things proceed under the present trajectory, without procrastination or delay for any reason.

Article 14 of the book of conditions for pre-qualification and for granting the Exploration and Production Agreement stipulates that the basic duration of the exploration phase is set to a maximum period of seven years, divided into two periods: the first exploration period is three years, extendable by one year, and the second exploration period is two years, extendable by one year. In other words, extracting natural gas and developing wells on a commercial scale may not be possible before 2028-2030.

Secondly, Fragmented Approach: No clear-cut and long-term policy reflects the state's possession of a comprehensive strategic vision for the oil sector to be binding on various governments. It is usually invoked on Council of Ministers Decision No. 157 issued on 10/27/2007 de jure on 11/10/2007 (Official Gazette, No. 71 dated 11/15/2007), which approved a report prepared by the Ministry of Energy on oil policy for oil and gas exploration and exploitation in Lebanese waters.

It is evident that the enhancement of diverse developmental metrics, including the attainment of sustainable economic well-being, and notably the augmentation of domestic content and the localization of technology within the oil industry, all encompass pivotal objectives within the purview of oil policy. Hence, the nonexistence of such a policy framework inherently signifies a neglect of these

very objectives. This omission poses a direct risk to the prospects of realizing economic, financial, and developmental benefits that are essential for ameliorating the performance of the Lebanese economy and the sociopolitical landscape through the utilization of oil revenues.

Section Two: The Expected Long-term Strategic and Direct Economic Return of the Oil Wealth

1. Direct economic and financial returns

The estimates of recoverable natural gas reserves in Lebanese territorial waters vary widely among different sources⁸, reflecting the uncertainty and complexity of assessing these resources. According to available data:

A seismic survey by the British company Spectrum in 2012 suggested a lower estimate of 25.4 trillion cubic feet (tcf) of natural gas, equivalent to 720 billion cubic meters (bcm).

The Lebanese Ministry of Energy has put forward a higher estimate of 95.9 trillion cubic feet (tcf) of natural gas, equivalent to 2705 billion cubic meters (bcm).

Additionally, these reserves are accompanied by an estimated 660 million barrels of oil. These potential reserves account for a significant proportion of the natural gas reserves in the eastern Mediterranean Sea, ranging from 21.2% to 80%, based on estimates by the US Geological Survey (USGS) in 2010. The USGS indicated that the eastern Mediterranean basin contains around 122 trillion cubic feet of natural gas (approximately 3400 billion cubic meters) and 1.7 billion barrels of oil. This resource distribution spans several countries along the eastern Mediterranean coast, including Turkey, Cyprus, Syria, Lebanon, occupied Palestine, and Egypt.

Thus, these available quantities of natural gas as an extractable reserve in Lebanese waters hold substantial economic potential, particularly given its challenging financial and economic circumstances. The potential economic benefit could help address the country's needs and contribute to its economic recovery.

It should be noted that paragraph (b) of Article 22 outlines a royalty rate of 4% of marketable natural gas (collected by the state prior to extracted gas distribution). The distribution includes allocating part of the gas as cost oil for the operating companies, not exceeding 65%, and profit oil, which is shared between the companies and the state based on an accounting rule established in the agreement.

⁸ Journal of Petroleum Geology 2018, & Marine and Petroleum Geology- 25 June 2020, & Oil and Energy Trends, Sep. 2011.



Firstly, within the realm of the electricity sector, the 2010 electricity plan outlined the integration of natural gas, accounting for two-thirds of the energy sources for electricity generation by 2030. However, there are differing estimates concerning the magnitude of local gas demand within Lebanese power plants, coming from various analyses. These projections span from 2.6 billion cubic meters (bcm) to 4 billion cubic meters (bcm) over the 2020-2030 timeframe⁹. According to assessments by the Ministry of Energy, these figures escalate to 7 billion cubic meters by 2010. This figure is anticipated to witness a significant rise through the expansion of natural gas utilization, encompassing the domestic, industrial, commercial, transportation, and service sectors.

Secondly, from a fiscal standpoint, apart from its positive environmental implications, the utilization of natural gas in electricity generation facilities significantly influences the fiscal landscape of the state. The integration of domestically sourced natural gas for electricity generation would contribute to alleviating the deficit in the general budget, particularly given that treasury allocations to EDL constitute roughly 17% of the total public expenditure.

Thirdly, in the ambit of the trade balance, the expenditure on imported oil derivatives in the fiscal year 2022 stood at approximately \$5.17 billion, coupled with imports of petroleum gases amounting to \$216.3 billion. It constitutes over 28% of the total import value of \$19 billion for the same year, accounting for about one-third of the trade balance deficit and a substantial 87% of the deficit in the balance of payments in 2022. Consequently, the expansion of locally produced natural gas utilization across various sectors of domestic consumption will inevitably lead to a significant improvement in different public financial balances of the country, thereby achieving a foundational level of economic security.

Lastly, from the vantage point of both competitiveness and environmental stewardship, integrating cost-effective and environmentally friendly natural gas into the economic cycle, particularly within the energy production sphere, yields a clear-cut impact. This impact is twofold: first, it significantly enhances the overall competitiveness of the economy and augments its allure to foreign investments; second, it simultaneously ameliorates the surrounding environmental conditions, thereby

providing an enhanced quality of living and better health conditions.

2. Long-Term Strategic Impact

The state's achievement of this level of return relies on its commitment and ability to realize the internal content, a core aspect of any focused and well-researched policy for the petroleum industry, serving as both its foremost and ultimate objective. This specific content refers to a cluster of interconnected and overlapping issues, notably including the following:

- Striving to localize the knowledge and technology within this industry, as this objective significantly bolsters the forward and backward connections with other sectors of the national economy.
- Converting the depleted natural wealth derived from oil and gas into sustainable and inexhaustible human, physical, scientific, and institutional capital with the lowest possible financial and environmental costs and the maximum return.
- Ensuring economic, social, and environmental security and stability for present and future generations.

It is evident that the realization of this objective hinges to a large extent on the presence of an integrated strategy for this sector, seamlessly embedded within a comprehensive vision for the state's economic and social development. This strategy guarantees the state's oversight of the various stages of the value chains in the petroleum industry, whether directly or indirectly. It is underpinned by four fundamental pillars, comprehensively detailed in the subsequent diagram in the third section below.

Section Three: A Closer Look at Proposed National Strategy Pillars for the Petroleum Industry

As previously mentioned, the core of the desired petroleum policies lies in transforming depleted petroleum wealth into sustainable human and physical capital while minimizing costs and maximizing returns. This transformation ultimately ensures economic, social, and environmental security for current and future generations. It is evident that the absence of such policies, as exemplified by the

⁹ According to the Energy Sector Management Assisting Program 2010), it was mentioned in "Lebanon's Gas Trading Options", Bassam Fattouh and Laura El-Katiri.



Lebanese case, implies that the present and future of the petroleum industry sector are subject to the influence of foreign companies and the countries behind them, along with their financial, technical, technological capabilities and expertise, huge and influential political support that makes them the most capable of controlling and imposing their conditions. It is especially noticeable when commercial and financial considerations dominate the pre-qualification criteria and the Exploration and Production Agreement terms. As a consequence, the state's benefits from this sector remain limited to meager financial returns stemming from royalties, the state's share in profit oil, the operation of certain local service facilities, and the utilization of a limited Lebanese workforce.

A closer look at prerequisites for solidifying these policies leads to identifying several crucial elements that constitute their foundational pillars. The most significant among them are as follows:

Pillar One: National Sovereignty over the Petroleum Sector

The initial cornerstone revolves around establishing national sovereignty over the petroleum sector. It entails primarily elevating the national component in all three phases of the petroleum industry, without prejudice to the role of the local and foreign private sectors based on partnership and state ownership of petroleum assets and resources. The importance of this requirement lies in achieving several strategic goals that can be summarized as follows:

- Initiating proactive measures to preempt the potential pitfalls of the "resource curse". Integrating the petroleum industry into the national economy is pivotal to this pursuit, delineated by separating public and private domestic consumption financing from oil-generated revenues. It safeguards the interests of future generations, with the Sovereign Fund emerging as a key player in this regard.
- Employing oil revenues across multiple domains, including the augmentation of the nation's absorptive capacities. It extends to realms spanning industrial, agricultural, service, and knowledge sectors, as well as strengthening infrastructure and thus augmenting Lebanon's diplomatic influence on the global stage.
- Localizing petroleum industry technology while concurrently attracting the expertise of the Lebanese diaspora.
- Increasing state's capacity to actually control the pace of petroleum activities and the consequent international obligations, including controlling

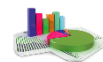
the rate and method of depleting oil fields by imposing adherence to best practices to maintain the wellbore integrity and sustainability (according to what was stipulated in the book of conditions for pre-qualification and for granting the Exploration and Production Agreement contained in Article 14, Clause 14.7 of Decree No. 4918 of May 31, 2019), up to the obligations imposed by international agreements, whether in terms of marketing abroad or controlling carbon emissions, for example.

While Article 5 of the Exploration and Production Agreement permits the state or any state-owned entity to partake as a right holder in petroleum activities, evident indications suggest that the state has no intention to engage in any capacity, particularly in light of the imminent issuance of licenses in the second round, slated for the allocation of remaining exploration and exploitation blocks (with the deadline extended until October 2, as aforementioned). While realizing this objective may not be pragmatically feasible during the initial phases of the petroleum industry (Upstream), primarily due to technological intricacies and substantial workforce requirements, the prospect remains open to achieve this ambition in subsequent stages—namely, the Midstream and Downstream phases.

This pursuit, however, is rife with innumerable challenges encompassing logistical, material, human, financial, and administrative prerequisites. In what follows, we will address only the infrastructure and the executive arm, leaving other problems to be addressed later.

Firstly, the matter of infrastructure, encompassing its role and significance, spans various dimensions—material, human, administrative, organizational, legislative, and more. Nonetheless, this paragraph will only address the physical dimension, leaving other dimensions for subsequent sections. By "physical structure", we refer to the terrestrial and maritime transportation networks of diverse forms, including pipelines, roads, containers, railway lines, tanks, ports, storage and treatment facilities, liquefaction and gasification stations, delivery and distribution points, in conjunction with currently deteriorating public services facilities as communications and electricity. The criticality of this infrastructure's availability is undeniable, impacting the efficiency and effectiveness of local resource utilization and the maximization of added value within the broader economic context.

Given the significant investments required to establish this infrastructure, it is only logical to raise



questions about the state's capability and responsibility in this domain on one hand and the anticipated feasibility vis-à-vis the considerable costs on the other. However, the provisions of the Exploration and Production Agreement indicate that the state has previously ceded this responsibility to foreign enterprises.

Article 14 of the Exploration and Production Agreement for Petroleum Activities specific provisions in paragraphs 5 and 6 outline the requirements and responsibilities related to Gas Infrastructure and Marketing Plans. These paragraphs stipulate the following key points:

"Right holders are obligated to create and present a comprehensive Gas Infrastructure and Marketing Plan to the Minister... This plan is to be submitted concurrently with the Production and Development Plan... The Gas Infrastructure and Marketing Plan should encompass details of the proposed facilities dedicated to processing, transportation, storage, and delivery of natural gas... Additionally, the plan must provide information regarding gas purchase agreements and the envisaged financial arrangements for facility construction... Furthermore, it should outline the projected timeline for planning and construction, along with the anticipated annual production volumes of natural gas".

Companies holding the rights can request an extension for the specified submission deadline of 180 days, extending it up to three years. In case the minister declines the extension request, the right holders will have a subsequent 60-day period to submit the plan. Failing to do so within this timeframe signifies the right holders' final acknowledgment that the gas discovery lacks commercial viability, therefore the development and production plan is originally considered cancelled.

Assuming that the companies actually adhered to the deadlines and specifications, the question remains whether the aforementioned infrastructure was originally designed to market and distribute the state's share locally and abroad. And what are the guarantees, or rather the conditions and prices that these companies can accept to market the state's share? And if these operating companies or license holders already have their own markets and plans that guarantee marketing their share of the extracted natural gas, then what about the state's share? Does the state already have specific programs and policies on how to dispose of these quotas? What is the form of the relative distribution of these shares mainly between the domestic market and export abroad? What markets can constitute an export destination? How will the state share be stored? And where?

Indirect responses to these inquiries could potentially be uncovered within numerous articles and sections of the Exploration and Production Agreement. These provisions affirm the conclusions drawn in the above analysis that the state lacks specific programs or policies dedicated to promoting the national aspect within the petroleum industry and optimizing the internal content of this diminishing resource.

Paragraph 8 of the aforementioned Article 14 stipulates that "The Minister reserves the right to require that the state's portion of royalties and oil profits be allocated as natural gas for local market consumption. Additionally, the Minister may propose that right holders sell all or a portion of the produced natural gas to the state or an affiliated entity for utilization in the local market (noting that companies are not obliged to adopt this alternative)". Furthermore, Paragraph 2 of Article 22 stipulates that "the state holds the option to collect the royalty either in cash, denominated in US dollars, or kind (oil and gas)".

Nonetheless, the lack of requisite infrastructure for the transportation, processing, and storage of the state's own allotment or acquired quantities relegates this option (i. e., the state's disposal of its share) to a theoretical concept, casting it within the realm of impracticability. Consequently, the inevitable option lies in the state obtaining its share in financial terms and as per the stipulated conditions determined by the operating companies. Paragraph 10 of the same article further reinforces this course of action, stating: "Should the Minister, in concurrence with the Minister of Finance, opt that the State shall not acquire the entirety or a portion of the State's royalty, profit oil share, or any portion of natural gas, the right holders must incorporate such natural gas into any procurement and marketing agreements delineated in the Gas Infrastructure and Marketing Plan".

This reality effectively diminishes prospects of maximizing the indigenous content of the emerging local petroleum industry and fortifying its interconnections with other sectors of the national economy.

To avert this consequence, adherence to the implementation of Paragraph 4 of Article 22 becomes imperative. This paragraph mandates: "The development and production plan, as well as the gas infrastructure and marketing plan, must encompass the utilization or construction of transportation facilities of sufficient capacity to enable the conveyance of in-kind collected royalties at designated one or more delivery points specified therein. Costs and expenses associated with the



utilization or construction of such facilities shall be deemed recoverable to the extent permitted...".

In any scenario, the state's pursuit of obtaining its share in cash, a most likely scenario, grants foreign companies' complete autonomy to determine their preferred approach for utilizing their share and the purchased state share of natural gas. Among the feasible and more plausible options in this realm is for these companies to consider the entire available gas volume and liquefy it through floating platforms or dedicated vessels. Subsequently, these quantities would be directly exported overseas without entering the national territory. This, in turn, diminishes the added value of this resource to a minimum.

Hence, it becomes imperative for the state, its regulatory entities, and pertinent institutions to demonstrate unwavering determination concerning the transfer of extracted quantities to onshore facilities dedicated to their processing and liquefaction. This approach should be emphasized, ensuring that a defined portion of these quantities (to be determined by legal measures) is allocated for domestic consumption, encompassing sectors such as energy, residential, industrial, service, and agricultural. Subsequently, the surplus portion can be earmarked for export or sale to companies through channels that the state designates and maintains control over.

In this context, the opportunity exists to draw insights from numerous oil and gas-producing nations that embrace specific economic models for gauging the requirements and expenses related to the essential infrastructure for controlling the volumes of oil extracted throughout the stages of production, transportation, storage, processing, and distribution. Such operations and activities are frequently overseen, supervised, and executed by state-owned enterprises. Often, these entities engage in collaborative ventures with the private sector to execute these undertakings. Notably, the establishment of petroleum industry infrastructure need not solely fall within the realm of the state's direct obligations and responsibilities. Instead, it presents a distinct prospect for forging partnerships with local and international private enterprises to undertake this endeavor and further attract direct foreign investments.

The state still has a few years left, and it is hoped that it will be used to develop a plan for investment in infrastructure, with joint private (internal and external) and public financing (through the sovereign fund or the proceeds of managing state assets by a company established for this purpose). This plan is necessary to accelerate Lebanon's benefit from gas

wealth, to strengthen its regional and international role in this field, and to reduce the cost of energy for consumers and producers in general, in addition to contributing to reducing deficits in the state's public financial balances, as we have previously indicated. Among the most prominent features of the desired plan are the following:

- Building an extensive domestic gas pipeline network, interlinking gas fields to power plants that have been transitioned to operate solely on gas. Additionally, establishing a local distribution network to supply gas to residences and industries.
- Simultaneously investing in oil refineries and constructing one or more ports (one in the southern region and another in the northern region), thereby facilitating future exports of petroleum derivatives.
- Commencing with the development of mid-scale liquefaction stations as an initial phase. These stations would subsequently evolve into larger facilities, positioning Lebanon as a front-runner in natural gas liquefaction and export. This strategic advantage would set Lebanon apart within the evolving landscape of the Eastern Mediterranean region.
- Establishing sufficient reservoirs designed for storing petroleum derivatives, interconnected with strategic points and delivery hubs meticulously equipped for this purpose. These storage tanks could complement the existing infrastructure of oil refineries.

Secondly, the state's executive arm in the petroleum sector is denoted specifically as the National Petroleum Company.

By definition, this company is usually affiliated with the nationality of the home country, it operates on both local and international fronts across various segments and phases of the petroleum industry. The company is either entirely state-owned or a collaborative endeavor between the public and private sectors, wherein the state retains a substantial portion of its equity, enabling robust oversight and control.

As per legislative measures, Article 6/2 of Law 132/2010 explicitly outlines the establishment of the National Petroleum Company. However, this directive is encumbered by legal, economic, and political considerations, as expounded in the following clause: "When deemed necessary, and upon identifying promising commercial opportunities, the establishment of a national oil company may be



enacted via a decree issued by the Council of Ministers, based on the minister's proposal and subject to the Authority's assessment".

Article 9 within the primary clauses of the joint operating agreement, as featured in Appendix C of the Exploration and Production Agreement (Decree No. 43), designates that "in the event of the state or any state-owned entity acquiring a participation share in line with Article 36 of the Exploration and Production Agreement, said country or state-owned entity becomes a party to the joint operating agreement...".

Furthermore, Article 5 - Paragraph 2 of the Exploration and Production Agreement specifies the State's engagement subsequently: "The State or any State-owned entity may assume, in the future, the role of a right holder according to Article 36 of this Agreement...".

In early 2018, the Parliamentary Development and Liberation Bloc proposed legislation for the establishment of the National Petroleum Company. This proposal was submitted for deliberation and referral to the General Assembly of the Council through parliamentary sub-committees. Regrettably, as of present, this legislation remains pending without formal enactment.

In terms of motivations, it is self-evident that oil, as a strategic asset, demands direct governance to safeguard it as an exhaustible resource, ensuring that foreign and private entities do not exploit it solely for rapid gain. Such exploitation could jeopardize numerous vital economic, social, and political objectives highlighted earlier. These aspirations stand to be genuinely realized through the establishment of a national oil company, serving as a direct avenue for the state's participation in the management of the petroleum sector.

Consequently, the urgency of the National Petroleum Company's formation arises to bridge the expertise and specialized knowledge gap that exists between the state and multinational corporations. Within this framework, national entities serve not only as conduits for accessing pertinent petroleum industry insights but also as platforms for adept analysis. This elevated comprehension enhances the state's negotiation stance with foreign counterparts. Moreover, the national company facilitates the development of local intellectual capital in the realm of petroleum wealth, fostered through hands-on involvement and experiential learning. It concurrently functions as a pivotal conduit for technology transfer to the homeland, thereby propelling societal advancement. These valuable

insights and competencies cannot be simply attained through well-designed contracts with operating entities, even with the state ensuring their genuine implementation, or through the formulation of a coherent and effective financial-tax framework, and other regulatory protocols and statutes.

Hence, the direct involvement of the state via a national oil company stands as the most potent safeguard for national interests, in contrast to market dynamics and the endeavors of domestic and foreign private enterprises, which pursue interests that may not necessarily align with those of the nation. In essence, the National Petroleum Company assumes the role of an equilibrium-establishing factor within the domestic market, curtailing the potential of the private sector and foreign corporations to exert undue influence over local oil provisions or to manipulate supply schedules due to company-specific or national motivations. This, in turn, bolsters the nation's capacity to assert itself as a formidable player in the global oil arena.

With the establishment of the National Petroleum Company, primarily aimed at overseeing the governmental commercial interests within the envisioned oil sector during its initial phase, the framework for managing the sector attains its comprehensive structure encompassing four pillars: political-legislative (encompassing institutions and laws), administrative-regulatory (represented by the Petroleum Administration Authority), commercial (embodied by the National Petroleum Company), and financial-economic (marked by the ongoing development of the Sovereign Fund).

In the realm of function and financing, the National Petroleum Company typically assumes a multifaceted role, each entailing distinct requisites encompassing material, financial, and human resources. Obviously, these roles unfold in tandem with the developmental phases of the national company and its involvement in petroleum exploitation, whether directly or through specialized service entities. During their early operational stages, some national oil companies may undertake responsibilities such as importing oil derivatives, managing the state's share of oil and profit, and facilitating local marketing while imposing sales fees—akin to practices observed in various African nations.

Indeed, numerous instances demonstrate that nascent national oil companies secure a stake in projects as a prerequisite for awarding licenses to foreign enterprises. This stake typically ranges from 5% to 20%, with foreign operating entities covering exploration and development expenditures. This



share can be stipulated by law or established through negotiation between the involved parties. Over time, many national oil companies seek to augment their ownership in licenses for oil field development, concurrent with bolstering their financial reservoirs and enhancing their technical and human capacities. As these companies progressively engage in commercial petroleum endeavors, they often gradually relinquish administrative and social auxiliary functions to other state institutions instituted for this purpose, thereby averting potential burdens.

Clearly, the recently established National Petroleum Company necessitates initial financial backing to facilitate its operations, encompassing the coverage of expenses and the facilitation of its launch, all while awaiting oil extraction, distribution, and the accumulation of substantial financial yields. This process typically unfolds over a span of several years from the company's inception and commencement of operations as a sector operator. During this interim period, the state assumes the primary role of financier for the company, drawing from the subsequent sources:

- Allocations from the public budget,
- Returns generated by the company's own activities, including ancillary operations such as refining, transportation, and distribution,
- Reservation of a portion of earnings derived from the sale of geological data or payments from operators (such as license signing bonuses, surface exploitation fees, etc.),
- Contributions of the private sector as a capital partner,

Clearly, many of these resources are typically limited, exacerbating the financial constraints faced by national companies during the initial pre-extraction phase at a commercial scale. Consequently, it is reasonable for the company's scope to remain relatively restricted in terms of human, financial, and technological dimensions during its early establishment.

Even if we assume that the state has the capacity to provide funding, it would not be prudent to undertake costly and extensive investments to enhance the operational capacities of the national company in the preliminary stages, unless there is a confirmed presence of commercially viable oil

reserves capable of sustaining operations for a minimum of 15 years, thus ensuring the economic viability of such an investment.

During these initial stages, the primary objective of the national company is not centered on achieving profits and financial gains. Given the absence of significant operational costs or debts that need immediate settlement, as mentioned earlier, the primary focus is on closely monitoring the activities of foreign operating companies within the sector. Simultaneously, the company aims to acquire administrative and technological expertise through collaboration and partnerships with both domestic and foreign private sector investors. This includes initiatives such as establishing energy research and development centers in conjunction with these companies, all the way to fostering the advancement of managerial skills and capabilities within the national company's workforce.

Regarding challenges and obstacles, it is evident that the establishment of the National Petroleum Company presents a series of considerations and difficulties that are sometimes used as excuses to dismiss this crucial endeavor. However, such challenges should be viewed as opportunities for thorough and earnest examination in order to devise suitable solutions. It is worth emphasizing that the early stage of the company's development does not mandate its immediate involvement in activities such as exploration, extraction, and reservoir development, which are characteristic of the initial phase of the petroleum industry. As a result, the proposal's scope is deliberately focused on creating a national company operating as a non-operator.

This non-operator company is proposed to hold a designated share, not less than 10%, in one or more licenses granted to investing enterprises. These shares would be distributed across specific blocks or areas, with the precise details being determined through timely negotiations with the relevant companies. This approach is consistent with Article (2) of the principal provisions outlined in Appendix C of the Exploration and Production Agreement. This article stipulates a minimum share of 10% for non-operating rights holders¹⁰ and 35% for operating rights holders.

At this preliminary stage, the aim is not to commit substantial financial resources or intricate technical,

¹⁰ As outlined in the stipulations outlined in the qualification of oil companies participating in the licensing rounds for oil exploration and production in Lebanese waters, there are two types of right-holder companies: The first type is operating companies that undertake direct management of field operations, including design, drilling, extraction, construction facilities, maintenance and logistics

services. It owns assets around the world of no less than \$10 billion. The second type is non-operating companies whose role is limited to participating in the management committee of the oil conglomerate, which includes operators and non-operators, and to carry out marketing and commercial activities and assume organizational tasks. The assets of these companies are not less than \$500 million.



human, and technological expertise. Rather, the focus lies on establishing the national company as a non-operating participant. Such an approach seeks to strike a balance between the urgency of establishing the company and the complex demands of the petroleum industry's initial phases, while promoting national participation and control within a framework of fair collaboration with investing enterprises.

Subsequently, the national company would gradually assume its designated responsibilities, aligning with the evolving stages and scope of the petroleum industry. It would leverage its accumulated experience, knowledge, and human and material capabilities. It is important to acknowledge that each phase and field within the petroleum industry carries its distinct financial commitments, human resources, and requisite technical proficiencies. The establishment of a capable and influential national presence in the oil sector is a process that requires both time and financial investment.

To address potential financial constraints, negotiations with foreign companies could be pursued to find solutions and secure additional support. In exchange for such backing, the state might offer certain supplementary advantages to these companies, thereby mitigating the financing challenge.

The perceived scarcity of expertise and qualified professionals for the intricate petroleum industry might appear as a theoretical impediment. However, numerous officials and observers, including the Minister of Oil, acknowledge the presence of Lebanese experts specialized in the oil sector. Many of these individuals currently hold esteemed positions in the management of major international oil corporations.

Notwithstanding these strengths, numerous challenges lie ahead in the establishment and initial operations of the National Petroleum Company. These challenges encompass various aspects, such as:

- The potential expansion of the company's influence and its potential involvement in shaping local political dynamics. This challenge may prompt the need for specific legislative measures to regulate its scope of influence.
- The prevalence of corruption in various forms, as per international standards and indicators, within the framework of Lebanese state institutions. This corruption risk could impede the company's pursuit of requisite efficiency, potentially transforming it into another avenue

for patronage and distribution of favors among influential circles. Counteracting these risks mandates strict adherence to the highest standards of governance and transparency, which will be elaborated upon subsequently.

- The potential for conflicts of interest between the National Petroleum Company, functioning primarily as a commercial entity within the local market, and various political and financial stakeholders who possess investments in the oil derivatives trading sector and its related services. This underscores the importance of enforcing existing laws and ensuring authorities uphold principles of equitable and ethical competition.

Regarding its capabilities, it is essential to acknowledge that the national company, in its aforementioned roles, will not embark on its journey from scratch. Rather, there exist tangible assets that can facilitate its operational commencement. These assets pertain to the oil facilities situated in Zahrani and Tripoli, both under state ownership. These installations, which ceased operations in 1989 and 1992 respectively, presently engage in fuel oil and gas oil importation, storage, subsequent processing, and subsequent local market distribution through collaboration with private enterprises. With an existing storage capacity of 270,000 tons, these facilities have the potential for substantial augmentation, potentially exceeding 600,000 tons, thus establishing them as one of the most sizeable storage complexes within the region.

Furthermore, beyond the delineated roles, contemplation of expanding the purview of the National Petroleum Company to encompass what may be termed a "National Energy Company" becomes imperative. In this envisioned expansion, the company would not only undertake petroleum-related activities but also venture into the production of diverse renewable energy forms. This strategic shift would secure the company additional fiscal inflows, whilst concurrently provisioning the nation with indispensable clean energy sources.

Pillar Two: Organizational-Institutional Structures and Effective Governance

Efficient governance within the petroleum industry sector necessitates the establishment of regulatory and institutional frameworks characterized by flexibility and independence from sectarian affiliations. Despite Lebanon's accumulation of a considerable array of anti-corruption legislation, particularly within the petroleum sector, its classification among the world's most corrupt nations, even in resource management, underscores the insufficiency of legal text alone. True reform



must extend beyond legal provisions to address the core of the judiciary as an autonomous and unbiased institution, vested with the capacity for accountability and the equitable imposition of penalties, devoid of favoritism or exemption.

The recently published 2021 Resource Governance Index ¹¹ raises apprehensions about Lebanon's resource management future, highlighting its "weak" performance in revenue management and "poor" rating in terms of the "enabling structure," despite an "acceptable" score concerning its ability to extract value from the petroleum sector.

Considering the aspiration to forge a promising future for this sector and its developmental prerequisites, questions arise concerning the ambiguity surrounding the responsibilities and mandates of governmental bodies and institutions tasked with overseeing these facilities and coordinating their activities. For instance, the query emerges: Who will assume the role of supervising terminals and transportation networks at ports and delivery points? Will it be the Ministry of Transport, Energy, Finance, or Industry? Furthermore, the diverse security forces' involvement in this realm and the regulation and enforcement of tariffs for facility usage require elucidation. Striking an equilibrium and efficacy in their utilization poses an added challenge, especially given the intricate process of selecting these agencies and institutions. The overseeing authority must possess a comprehensive and nuanced understanding of the diverse developments and fluctuations inherent in global energy markets.

Consequently, these evolving dynamics may necessitate amendments to specific legislative provisions to propel the petroleum industry forward. This includes the reevaluation of the Petroleum Administration's scope of authority and its appointment mechanism, detached from sectarian quotas. Achieving this involves diminishing its reliance on ministerial oversight and empowering it with decision-making capabilities, particularly in technical facets of petroleum operations.

Pillar Three: Economic Utilization of Petroleum Wealth

Striving to establish a comprehensive and productive oil sector encompasses a multitude of objectives, with three standing out as particularly prominent:

- Converting available petroleum resources into capital and assets for industrial, productive, and

developmental projects that serve both current and future generations.

- Ensuring the financial equilibrium of the state treasury to preclude an escalation in indebtedness.
- Safeguarding economic and social stability in the face of external shocks in general, and the reverberations stemming from price instability in the global energy markets in particular.

In essence, the overarching aim of these endeavors is to transform the depletable and finite petroleum wealth into sustainable productive capital. Achieving these calls for a series of measures directed at channeling projected oil revenues into the national economy. This can be realized through the establishment of specialized and autonomous financial entities fortified by a robust framework of integrity and effective governance. Foremost among these institutions is the Sovereign Fund.

As previously mentioned, we alluded to the completion of the Sovereign Fund draft legislation in parliamentary committees, poised for subsequent presentation to the General Assembly of Parliament for endorsement. While the final version of this law remains shrouded in some ambiguity due to the multitude of amendments it has undergone, it is crucial to underscore that the success of any sovereign fund's operation is contingent upon adhering to globally recognized prerequisites. These conditions serve as proactive measures to shield the nation from the Dutch disease phenomenon and the perils of succumbing to the resource curse. In Lebanon's context, these prerequisites translate into ensuring the establishment of a fund endowed with a nimble and adaptable administrative and executive structure, extricated from the conventional local sectarian quota framework. This fund should also be fortified with contemporary and dynamic decision-making mechanisms governing the management of its revenues. This is to guarantee their conversion into judicious investments and savings, upholding financial, economic, and social security, rather than becoming an exclusive portfolio for certain factions or serving to offset the losses resulting from overarching financial and monetary policies. Concurrently, due consideration must be accorded to the alterations imposed in recent years, stemming from the financial, monetary, and banking crisis, and the imperatives for economic and financial advancement and recovery. Hence, the forthcoming sovereign fund legislation is anticipated to address a spectrum of inquiries. Among these are pivotal questions such as:

¹¹ See the 2021 Resource Governance Index - Lebanon, Natural Resource Governance Institute.



1. How will the revenues of the fund be apportioned between the present and forthcoming generations, and what will be the designated proportions for each?
2. What parameters will define the fund's contribution to the state's public finances, encompassing strategies and initiatives aimed at resolving the existing crisis?
3. What legal mechanisms will be enacted to guarantee the Fund's autonomy, efficacy, and adaptability in the face of fluctuating circumstances?

Furthermore, within the context of effectively assimilating oil wealth into the economy, it is imperative that oil revenues be decoupled from the state's public finances. This implies that an overreliance on these revenues should not be allowed to overly burden the public budget.

Pillar Four: Developing national capacities for petroleum sector management

Any comprehensive national vision or strategy for the petroleum sector inherently encompasses a vital pillar, which focuses on the unwavering commitment of the state, along with its pertinent institutions and agencies, to bridge the gaps in human and material resources, as well as national logistical, scientific, and financial capabilities. This commitment is imperative to effectively manage the petroleum sector,

constituting an essential and fundamental prerequisite for achieving the objective of enhancing the national component and its elevation within the petroleum industry.

The legislative framework pertaining to the petroleum sector, as outlined earlier, includes explicit obligations imposed on oil companies with regards to the training and employment of a significant proportion of the Lebanese workforce. Article 20 of the investment agreement for Block No. 9 mandates investing companies and contractors to engage 80% of Lebanese nationals in various activities of the petroleum project. However, the fulfillment of this requirement necessitates the presence of a trained and skilled Lebanese workforce. Decree No. 43/2017 has endeavored to address this by stipulating that companies allocate a portion of their operations to providing essential training for the local workforce.

Nonetheless, this does not relieve the State of its responsibilities in terms of preparing and training the Lebanese workforce, as well as enhancing their scientific and technological competencies within the realm of the petroleum industry. These efforts can take place either independently or through collaborative ventures with local and foreign private entities. Such initiatives could be funded through the allocation of a percentage of fees, subsequently derived from oil revenues.

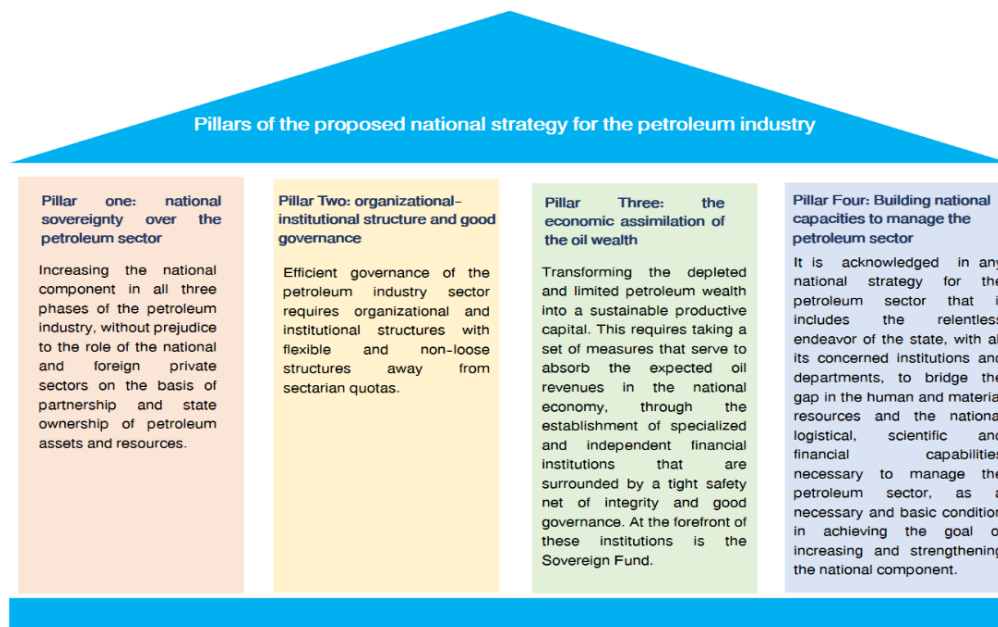


Figure 2: Pillars of the National Strategy for the Petroleum Industry



3. Determinants of Lebanon's Export: A Gravity Model Approach

Lebanon is currently undergoing an unparalleled economic crisis in its history. This crisis is distinguished by severe financial upheaval, an unprecedented decline in foreign exchange reserves, and a notable deterioration in the balance of payments. Given that the nation is grappling with one of the most formidable periods of economic contraction it has ever faced, comprehending the determinants of exports assumes a role of utmost significance. This significance extends beyond academia, resonating deeply with policymakers and stakeholders who aim to reinvigorate the export sector, foster sustainable economic growth, and ultimately extricate Lebanon from its prevailing financial distress.

The persistent financial crisis, which was ignited towards the close of 2019, has engendered far-reaching repercussions across Lebanon's economic landscape. The depletion of foreign currency reserves, coupled with waning investor confidence, has precipitated substantial strain on the Lebanese lira. This has resulted in an escalation of inflation rates, impeding the government's capacity to service its external debts and further compounding the country's balance of payments predicament.

In the midst of these challenging circumstances, the export sector has emerged as a linchpin for Lebanon's economic resurgence. Amplifying exports can play a pivotal role in rectifying the trade disparity, beckoning foreign capital inflows, and diminishing reliance on imports. Strategic initiatives aimed at diversifying export markets, fostering value-added industries, and leveraging Lebanon's distinct geographical position hold the potential to

substantially ameliorate the repercussions of the financial crisis and restoring confidence in the country's economic potential.

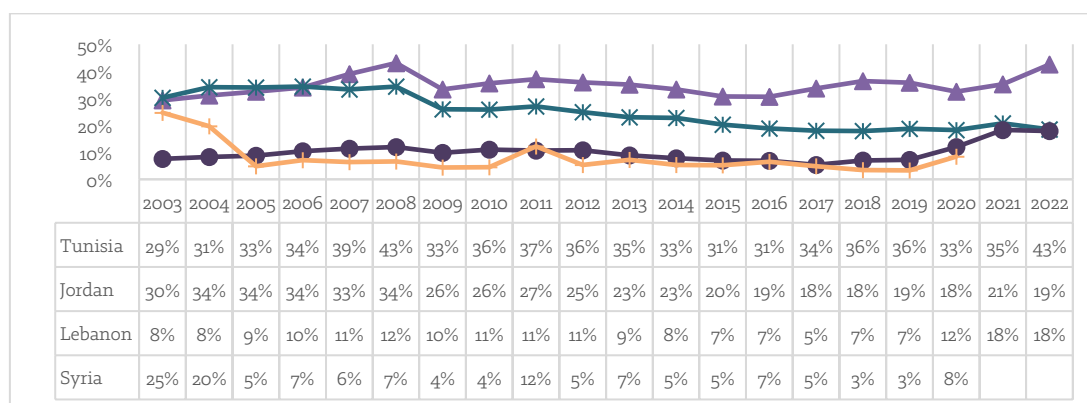
This paper sets out to elucidate the fundamental determinants underpinning Lebanese exports, employing the framework of the gravity model during the timeframe spanning from 2003 to 2022. This model functions as a validated experimental instrument, facilitating the identification of the driving forces behind bilateral trade relationships and the dynamics that influence the exchange of goods and services between nations.

Through this model, an array of critical trade-related inquiries can be addressed, including: Have particular trading partners historically assumed pivotal roles in Lebanon's export landscape? How have factors such as economic scale, geographical proximity, and political stability shaped trade patterns within Lebanon? Moreover, this study endeavors to shed light on the prospective repercussions of the ongoing financial crisis on trade and the broader economic dynamics within the country.

First: The Performance of Lebanon's Foreign Trade 2003-2022:

Export-to-Gross Domestic Product (GDP) Ratio: The external trade of Lebanon has exhibited stability during the period spanning from 2003 to 2022. The share of Lebanese exports in the global total remained consistently around 0.02%. The average export-to-GDP ratio for the years 2003-2019 was approximately 8.86%, which subsequently increased to 16.07% in the years 2020-2022. This increase serves as an indicator of an overall decline in GDP rather than being a result of export expansion. The table below illustrates the evolution of the export-to-GDP ratio in Lebanon in comparison to selected regional countries.

Figure 1: Share of Exports to Gross Domestic Product (GDP) in Selected Countries 2003-2022



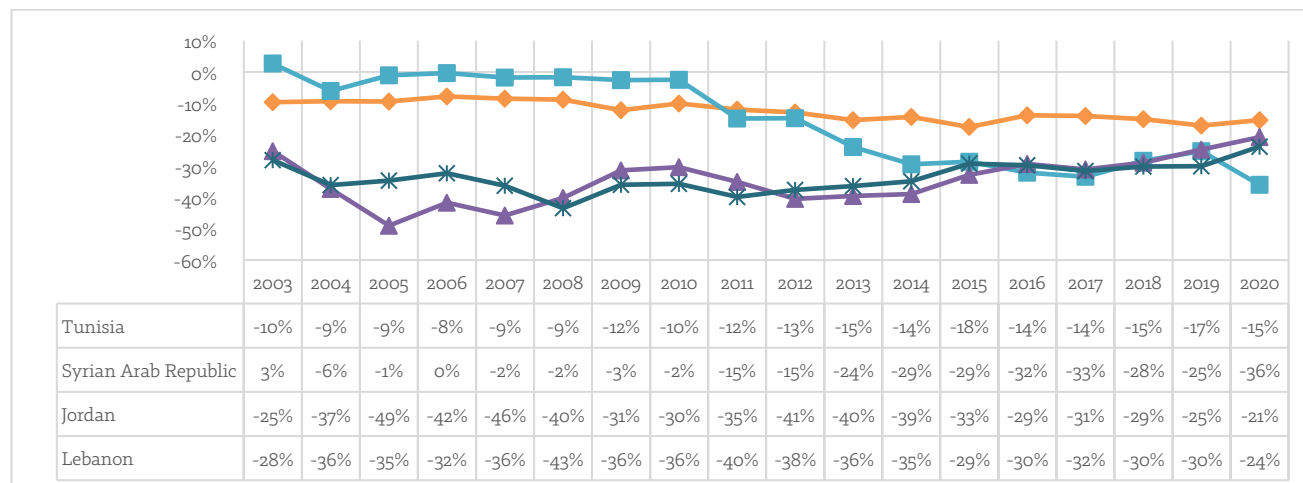
Source: Prepared by the Center based on data from the World Trade Center (export figures) and the World Bank (Gross Domestic Product)



Trade Balance to Gross Domestic Product (GDP) Ratio: The accumulated trade deficit in Lebanon between 2003 and 2022 amounted to approximately 253 billion dollars, reflecting an average of 34% relative to the gross domestic product during the period from 2003 to 2020. This percentage escalated to 42% in the year 2021 due to the deterioration of output during the economic crisis that has beset the

Lebanese economy since the end of 2019. A comparative analysis with certain regional countries reveals a similar proportion with Jordan, while remaining below twenty percent in Tunisia and staying below ten percent in Syria prior to the challenges of 2011, as illustrated in the following figure:

Figure 2: Trade Balance to Gross Domestic Product (GDP) Ratio 2003-2020



Source: Prepared by the Center based on data from the World Trade Center (export figures) and the World Bank
(Gross Domestic Product)

Lebanon's Trade Partners: An analysis of Lebanon's exports for the period from 2003 to 2022 reveals an inherent instability among destination countries, indicating a fluctuating distribution of trade partners. This suggests a lack of sustainability in export destinations, as transactions tend to outweigh steadfast trade partnerships. This dynamic imposes a significant challenge on Lebanese exports, necessitating the pursuit of stable and enduring markets. Consequently, Lebanon is compelled to

engage in a perpetual exploration of new markets and contend with abrupt shifts in demand. For instance, Saudi Arabia's share of Lebanon's total exports receded to 3% and 0% in the years 2021 and 2022, respectively, in contrast to an average share of 7% during the period from 2003 to 2020. This decline follows the 'Pomegranate Incident' and Saudi Arabia's subsequent embargo on imports from Lebanon.

Table No. 1: Share of export partners in total Lebanese exports, 2003-2022

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
UAE	10%	10%	10%	8%	8%	8%	11%	13%	11%	9%	14%	12%	15%	24%	23%
Syrian	6%	6%	5%	5%	6%	13%	7%	6%	6%	9%	6%	5%	3%	3%	10%
Türkiye	6%	3%	5%	6%	4%	5%	4%	3%	2%	4%	5%	2%	3%	3%	4%
Egypt	4%	2%	5%	2%	2%	2%	3%	3%	2%	2%	4%	2%	3%	4%	4%
Iraq	8%	8%	6%	5%	5%	8%	9%	8%	5%	6%	5%	4%	4%	3%	4%
Switzerland	9%	22%	12%	12%	12%	4%	2%	2%	3%	5%	4%	28%	28%	10%	4%
Jordan	3%	3%	2%	3%	3%	4%	4%	3%	3%	3%	2%	2%	2%	2%	2%
Arabia Saudi	6%	7%	6%	7%	8%	8%	10%	11%	8%	9%	6%	7%	6%	3%	0%
Africa South	0%	2%	8%	16%	18%	10%	8%	6%	18%	11%	5%	2%	0%	0%	0%

Source: Prepared by the Center based on data from the World Trade Center (export figures)



In order to elucidate these variations in partner shares, we have devised a novel methodology founded on the Coefficient of Variation to distinguish stable economic relationships of Lebanon from others, both at the state and commodity levels. The Coefficient of Variation¹² is a statistical measure that identifies the relative variation or dispersion within a dataset. This facilitates the development of a valuable insight into the stability of future trade relations. A higher Coefficient of Variation indicates instability in the share of the trading partner in Lebanese exports, and vice versa. Consequently, the use of the Coefficient of Variation in this analysis allows us to discern patterns and trends in Lebanese exports, thus contributing to the establishment of a more accurate foundation for decisions to enhance trade diversification. This includes identifying strategic trading partners to serve long-term economic growth and stability. In the table below, we have computed the Coefficient of Variation to ascertain the nature of the trade relationship with

Lebanon's prominent trade partners during the years 2003-2022. Accordingly, countries with a Coefficient of Variation less than or equal to 45 can be considered to have stable trade relations, while those exceeding 45 indicate unstable relations. As for the significance of these relationships per se, it has been measured in relation to their average share of Lebanese exports during the same period. Countries with a share exceeding 5% are designated as highly important partners, those with a share between 1% and 5% are categorized as moderately important partners, and those with a share below 1% are deemed less important partners. It is worth noting that alongside this indicator and average share, changes have been observed and linked to the economic crisis, as exemplified by Switzerland, which registered a Coefficient of Variation of 74.9 despite being a stable destination. The increase in the index is attributed to its significant share growth during the crisis years.

Table No. 2: The Degree of Stability of the Destination of Lebanese Exports 2003-2022

Country	Coefficient of Variation	Average Share of Lebanese Exports	Relationship Type
Switzerland ¹³	74.96	11.51%	Stable relationship and an important strategic partner
UAE	42.63	11.23%	Stable relationship and an important strategic partner
Syria	34.17	6.85%	Stable relationship and an important strategic partner
Saudi Arabia	33.88	6.72%	Stable relationship and an important strategic partner
Iraq	41.43	6.48%	Stable relationship and an important strategic partner
South Africa ¹⁴	122.02	5.19%	Unstable relationship despite the high average share of Lebanese exports
Türkiye	35.59	4.29%	Stable relationship and strategic partner of moderate importance
Jordan	19.78	3.08%	Stable relationship and strategic partner of moderate importance
Egypt	34.82	2.83%	Stable relationship and strategic partner of moderate importance
Qatar	37.2	2.77%	Stable relationship and strategic partner of moderate importance
Kuwait	33.86	2.51%	Stable relationship and strategic partner of moderate importance
USA	42.8	2.34%	Stable relationship and strategic partner of moderate importance
France	68.28	2.18%	Unstable relationship and strategic partner of moderate importance
China	104.94	1.57%	Unstable relationship and strategic partner of moderate importance
Belgium	74.14	1.38%	Unstable relationship and strategic partner of low importance

¹² Coefficient of Variation COV= (Standard Deviation / Mean) *100.

¹³ Switzerland acquires a balanced and stable share of Lebanese exports, especially in the jewelry sector. Therefore, the high coefficient of difference is the result of a significant increase in its share of Lebanese exports, especially after the crisis.

¹⁴ The main merchandise exported to South Africa is jewelry under HS 71 HS category. It started exporting significantly in 2009 before stopping after 2019.



South Korea	52.2	1.23%	Unstable relationship and strategic partner of moderate importance
United Kingdom	33.68	1.22%	Relatively stable relationship and strategic partner of moderate importance
Germany	21.6	1.18%	Stable relationship and strategic partner of moderate importance
Nigeria	30.23	1.14%	Stable relationship and strategic partner of moderate importance
Spain	28.83	1.11%	Stable relationship and strategic partner of moderate importance
Italy	24.99	1.11%	Stable relationship and strategic partner of moderate importance
Greece	65.09	1.09%	Unstable relationship and strategic partner of moderate importance
Congo	32.37	0.94%	A stable relationship and a less important strategic partner
Cote d'Ivoire	48.7	0.87%	Relatively stable relationship and less important strategic partner

Source: Prepared by the Center

The Evolution of Lebanese Exports 2003-2022 by Product at the HS 2-Digit Level: The annual volatility in the nature of exported goods may be one of the factors contributing to the fluctuation and diversification of export destinations and the variation in trade partner shares. According to the chart below, we observe that more than half of Lebanese exports are concentrated within seven groups of products. Foremost among these is jewelry (HS 71), with an average export share of around 24% between the years 2003-2022. Following this,

electrical machinery and equipment and parts thereof (HS 85) constitute 7%, while reactors, boilers, machinery, and apparatus (HS 84) make up 6%. Additionally, vehicles and automobiles (HS 87) account for 4%, while cast iron and steel (HS 72) have an average of 4%, and plastics and articles thereof (HS 39) represent 4%. Paper and paperboard and articles thereof (HS 48) constitute around 4%, and finally, preparations of vegetables and fruits (HS 20) registered a share of 3%.

Table No. 3: Share of Products to Total Exports 2008-2022

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
HS 71	17%	32%	26%	35%	36%	18%	14%	13%	24%	21%	17%	39%	39%	25%	21%
HS 85	8%	7%	9%	7%	6%	7%	6%	6%	5%	6%	8%	4%	3%	3%	5%
HS 84	7%	8%	9%	5%	5%	6%	6%	6%	5%	5%	5%	6%	5%	4%	5%
HS 87	1%	3%	8%	1%	3%	3%	8%	11%	12%	1%	7%	0%	4%	6%	7%
HS 72	6%	3%	4%	6%	3%	4%	3%	1%	2%	4%	3%	2%	2%	4%	4%
HS 39	4%	3%	3%	3%	3%	3%	4%	4%	4%	5%	5%	4%	3%	3%	10%
HS 48	4%	4%	3%	4%	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	2%
HS 20	2%	3%	2%	3%	2%	3%	3%	4%	3%	4%	3%	3%	3%	3%	3%

Source: Prepared by the Center based on data from the World Trade Center (export figures)

Stability of Exported Commodity Shares: To assess the degree of stability in the shares of exported commodities from Lebanon's total exports, we calculated the Coefficient of Variation previously employed to determine the stability level of trade partner shares. This was done with the aim of identifying strategic commodities for the Lebanese economy. The table below presents the results we have attained. Commodities with a Coefficient of Variation less than or equal to 45 are considered stable, while those exceeding 45 are deemed unstable.

As for their significance, it has been determined in relation to their average share of Lebanese exports between the years 2003-2022. Commodities with a share equal to or exceeding 5% are considered strategically important, those between 1% and 5% are of moderate importance, and those below 1% are of low importance. Furthermore, the analysis extended beyond these indicators and average shares to encompass the researcher's observations of occurring changes, particularly during the crisis period, to enhance the precision of the analysis

**Table No.4: The Degree of Stability of the Product Share of Lebanese Exports 2003-2022**

HS2	Description	Average -2003Share 2022	Coefficient of Variation	The nature of the goods
71	Pearls, precious metals and money	23.80%	36.6	Stable and highly valued product
85	Electrical machines and appliances and their parts	6.80%	29.8	Stable and highly valued product
84	Reactors, boilers, machines, devices and machine tools	5.90%	20.9	Stable and highly valued product
87	Cars, tractors, bicycles and other land vehicles	4.10%	92.5	Unstable product of medium importance
72	Cast iron, iron and steel	3.90%	41	Stable product of moderate importance
39	Plastics and their articles	3.80%	42.9	Stable product of moderate importance
48	Paper, cardboard and articles thereof from cellulose pulp	2.80%	38.4	Stable product of moderate importance
20	Vegetables, fruits and fruits preparations	2.80%	17.5	Unstable product of medium importance
94	furniture; medical and surgical furniture; Items for beds and the like	2.60%	53.9	Stable product of moderate importance
74	Copper and articles thereof	2.50%	32.2	Stable product of moderate importance
8	Edible fruits and fruits, citrus peels and watermelon peels	2.50%	73	The increase in the coefficient as a result of the increase in its share in the crisis years is a stable product of medium importance
33	Perfume and cosmetic oils and preparations	2.30%	45.2	Stable product of moderate importance
31	Fertilizers	2.30%	49	A relatively stable product of medium importance
76	Aluminum and articles thereof	2.00%	27.9	Stable product of moderate importance
49	Publishing houses, press and other products	2.00%	27.7	Stable product of moderate importance
22	Alcoholic drinks and liquids and vinegar	1.90%	22.4	Stable product of moderate importance
25	salt; matchsticks; Cement	1.60%	122.6	Unstable product of medium importance
73	Articles of cast iron and steel	1.60%	37.6	Stable product of moderate importance
28	Inorganic chemical products Organic inorganic compounds	1.60%	47	Stable product of moderate importance
27	Mineral fuels, mineral oils and products of their distillation	1.40%	189.4	Unstable product of medium importance
21	Various food preparations	1.30%	56.5	Stable product of moderate importance
62	Unknitted clothing	1.30%	40.4	Stable product of moderate importance
7	Edible vegetables, plants, roots and tubers	1.20%	31.5	Stable product of moderate importance
19	Cereal or flour preparations	1.00%	22.5	Stable product of moderate importance
17	Sugar and sugar products	0.90%	64.8	Unstable product of low importance



30	Pharmacy products	o. 90%	57.6	2011 Stable product and became of moderate importance after
24	Tobacco and manufactured tobacco substitutes	o. 90%	51.3	Unstable product of low importance
32	Tanning and dyeing extracts Ed tanning and its derivatives	o. 90%	34.3	Stable product with low importance
15	Greases, fats, oils and their breakdown products	o. 90%	38.6	Stable product with low importance
78	Lead and its articles	o. 80%	49	Unstable product of low importance
18	Cocoa and its preparations	o. 80%	33.1	Stable product with low importance
34	Soaps, organic surfactants, laundry preparations	o. 70%	21.2	Stable product with low importance
9	Coffee, tea, mate and spices	o. 70%	41.3	Stable product with low importance
68	Articles of stone, cement, asbestos or mica	o. 70%	53.9	Unstable product of low importance
44	wood and articles thereof; wood charcoal	o. 60%	55.6	Unstable product of low importance
61	apparel and accessories; minted	o. 60%	52.7	Unstable product of low importance

Source: Prepared by the Center

In conclusion, Lebanon has maintained a range of export partnerships with various countries from 2003 to 2022. Some of these partnerships have developed into strategic trade relationships, while others still hold untapped potential for further cooperation. Analyzing the stability of export destinations over time has provided insights into the reliability and consistency of these markets. The significance of certain countries as dependable export destinations and stable markets for Lebanese goods underscores the potential for strengthening economic ties and fostering mutual trust to promote sustainable economic growth.

Moreover, assessing the stability of product shares within Lebanon's total exports during the same period holds equal importance. The notable consistency in the products Lebanon exports reflects its competency and specialization in those areas. The stability of a producer's share in exports signals external demand confidence and the producer's competitiveness. Such products represent strengths that can be leveraged to establish a successful foreign

trade policy and further enhance Lebanon's economic outlook.

Section Two: Trade Gravity Model Theoretical Framework

Six decades after its initial introduction as a simple mathematical equation inspired by Newton's law of gravitation to describe the dynamics of trade, today this model is of great importance in the field of international economics and is the most used tool in interpreting and understanding global trade patterns and economic relations between countries. The empirical success of the model in addition, its ability to account for the complexities of international trade led to its widespread recognition and confidence among reputable international organizations such as the United Nations Conference on Trade and Development (UNCTAD), the World Trade Organization (WTO), the International Monetary Fund, the World Bank and others.

1. The trade gravity model utilized in this study

An extensive literature review¹⁵ proved useful in extending the basic gravitational model proposed by

¹⁵ See: Anderson and Markweiler (2002) the influence of factors related to security and institutional quality on international trade. Hillberry and Hummels (2003) The Boundary Effect Hillberry and Balistreri (2007) studied the effect of a local bias, which indicates a preference for consumption of domestically produced goods over imports. Hofbauer and Oegg (2003) the impact of economic sanctions on bilateral trade. Rose (2004), Subramanian and Wei (2007), Eicher and Henn (2011) Impact of WTO membership on trade flows.

Fontagne et al. (2005) the role of non-tariff measures in shaping international trade patterns. De Benedictis et al. (2005), Baier and Bergstrand (2007) and Egger et al. (2011) The impact of free trade agreements on bilateral trade. Disdier and Head (2008) the role of geographic distance. Head and Ries (2010) The role of official trade missions and government-led trade promotion efforts. Head et al. (2010) explore the impact of historical colonial relations on current trade patterns. De Sousa (2012), Campbell (2013), Glick and Rose (2016), Larch et al. (2019) The effect of currency



Tinbergen in 1962 to include more dummy variables. This review provided a solid foundation for building a richer and more complex gravity model that captures the complexities of the dynamics of international trade and yields more accurate and insightful results, enabling us to identify the different social, economic, geopolitical and institutional factors that play an important role in shaping trade patterns.

With insights gained from the literature, we improved the base gravity model by incorporating additional dummy variables, such as the existence of a free trade agreement between the two countries, the existence of bilateral trade agreements, the common language, and the possibility of exporting overland, among others. These added variables enable a more comprehensive understanding of the determinants of trade flows and facilitate a more accurate analysis of trade relations between Lebanon and the rest of the countries.

The equation used in this study is:

$$EX_{ij} = \beta_0 \cdot GDP_i^{\beta_1} \cdot GDP_j^{\beta_2} \cdot Pop_i^{\beta_3} \cdot Pop_j^{\beta_4} \cdot Dist_{ij}^{-\beta_5} \cdot Dummy_{ij}^{\beta_6,7,8} \cdot \varepsilon_{ij}$$

- **EX_{ij}** : is the dependent variable, representing exports from country i to country j
- **GDP_{it}** : GDP of Lebanon
- **GDP_{jt}** : GDP for Importing Country

When applying the gravity model, researchers commonly examine the Gross Domestic Product (GDP) of both the exporting and importing countries as explanatory variables to elucidate the bilateral trade flows between them. The GDP of the trading partners functions as a crucial indicator, offering insights into their economic vitality, productive potential and overall economic magnitude. This factor is recognized as one of the primary drivers shaping trade patterns between nations.

- **Pop_i** : Population of Lebanon
- **Pop_j** : Population of importing country

Analyzing population figures provides a metric for assessing the market scale in Lebanon and its trading counterparts. A significant disparity in population size, where Lebanon's population is considerably smaller than that of its partners, could suggest a potential market advantage for the partners due to their broader consumer base. Conversely, if Lebanon's population is relatively sizable compared

to its partners, this could indicate a robust domestic market for its goods and services.

- **$Dist_{ij}$** = Distance between Lebanon and importing country (Km)

The geographical distance separating Lebanon from its trade partners is a pivotal factor influencing the logistical and transportation expenses associated with the exchange of goods and services. Generally, shorter distances tend to lead to reduced transportation costs and quicker delivery durations, thereby enhancing the efficiency and cost-effectiveness of trade operations.

Dummy: variables play a significant role in the gravity model, capturing various qualitative aspects that affect bilateral trade relations. In this context, the following dummy variables were incorporated:

Common Language: A binary dummy variable is employed to signal whether Lebanon shares a common language with its trading partners. This variable aids in evaluating potential linguistic advantages or barriers that may affect business interactions and trade dynamics.

Signed Free Trade Agreement (FTA): Another dummy variable is used to indicate whether Lebanon and its trading partners have a free trade agreement (FTA) in place. FTAs are instrumental in promoting trade by minimizing or abolishing tariffs and trade barriers, thereby exerting a substantial influence on trade volume and patterns between nations.

Overland Export Possibilities: The utilization of overland routes for exporting goods and services is assessed through a dummy variable. This aspect is of particular importance to Lebanon, as it may offer cost-effective transportation solutions. Land routes often feature shorter transit times, lower transportation expenses, and heightened control over logistics compared to air or sea routes. Moreover, embracing land routes can bolster regional trade integration and fortify economic ties with neighboring nations. In this regard, a value of 1 is assigned to countries that imported from Lebanon through land border crossings, based on customs office export data.

These dummy variables provide valuable insights into the trade determinants that extend beyond mere economic factors, contributing to a more comprehensive analysis of trade relations between Lebanon and its partner countries.

unions on trade relations. Bensassi and Martinez Zarzoso (2012) The effect of piracy On International Trade, Melitz & Toubal (2014) The Effect of Common Language on Trade Patterns.



Study Sample:

The sample of countries under study included 35 trading partners of Lebanon that were selected based on the coefficient of change index and an average export share between 2003 and 2022 greater than 1%. These countries are United Arab Emirates, Syria, Turkey, Egypt, Iraq, Switzerland, United States of America, Qatar, South Korea, Jordan, Kuwait, France, Greece, Ivory Coast, Congo, Germany, Italy, Spain, Cyprus, Sultanate of Oman, United Kingdom, Canada, Netherlands, Liberia, Nigeria, Ghana, Guinea, Libya, India, Angola, Belgium, Algeria, Bahrain, Iran, and Saudi Arabia.

Study Period:

The study was conducted between 2003 and 2018, with years 2019 to 2022 excluded to mitigate the potential effects of deviations that could arise due to various factors, notably the COVID-19 pandemic and the economic crisis in Lebanon.

Empirical Results

The ensuing presentation encapsulates the most significant outcomes achieved through this model.

1. Positive and significant coefficients for both LOG (GDPI) and LOG (GDPJ) in the regression results indicate a positive relationship between GDP and exports. This aligns with theoretical expectations and empirical evidence in international trade, emphasizing the role of economic size and growth as crucial determinants of export performance. An increase in the GDP of Lebanon and its partner countries is likely to lead to a positive impact on the volume of exports between them.
2. The positive and significant coefficient associated with LOG (POPJ) suggests that an increase in the partner country's population positively correlates with higher exports from Lebanon to that country. This result is consistent with economic intuition, where a larger population often signifies a larger consumer base and potentially greater demand for goods and services. Therefore, as the partner country's population grows, the likelihood of increased trade between Lebanon and that country also increases.

However, the negative coefficient of -1.63 linked to LOG (POPI) indicates an inverse relationship between Lebanon's population and its exports to the partner country. This unexpected result could be influenced by other variables not considered in the model. Several potential explanations could underlie this unexpected outcome, warranting further scrutiny. For instance, shifts in productive capacity, diversification of industries, or alterations in

economic policies could conceivably disrupt trade dynamics between Lebanon and its partner countries. For instance, an increase in population might prompt greater domestic consumption, potentially reducing the surplus available for export. In addition, it could indicate that Lebanon is focusing on producing and exporting a narrower range of specialized good. Furthermore, the negative coefficient may also hint at variable omissions, measurement inaccuracies, or structural modifications in the business relationship that elude the confines of the model's representation. Further investigation is needed to understand the factors contributing to this observation.

3. A positive and significant coefficient of 0.72 associated with LAND indicates that the presence of a land route between Lebanon and a partner country is linked to increased exports from Lebanon to that country. This finding aligns with economic logic, as land routes provide an efficient means of transportation, reducing costs and logistical complexities. A land route enhances trade between the two countries, making exports and imports more accessible and cost-effective.

The positive coefficient of LAND underscores the significance of geographical proximity and accessibility in shaping international trade patterns. It accentuates the role of physical infrastructure, transportation networks, and trade facilitation measures in augmenting trade flows between countries. Additionally, the variable emphasizes the necessity of considering geographical factors while devising trade policies and strategies to elevate economic cooperation and integration between Lebanon and its trading partners.

4. FREE_TRADEIJ (Signed Free Trade Agreement): A positive and significant coefficient of 0.234 indicates that the presence of a free trade agreement between Lebanon and the partner country is associated with increased exports from Lebanon. Free trade agreements lower trade barriers, making it more convenient for goods to flow between countries. The conclusion of such an agreement is likely to lead to higher exports, promoting greater trade cooperation and economic integration.
5. LOG (DISTIJ): Representing the logarithm of the distance between Lebanon and the partner country, a negative coefficient of -0.35 indicates that as the distance between the two countries increases, Lebanon's exports to the partner country decrease. This result aligns with the gravity model's premise that trade tends to be higher between closer countries due to lower transportation costs. Increased distance



raises trade costs, potentially limiting trade opportunities between Lebanon and the partner country.

6. COMLIJ: This variable indicates whether Lebanon and the partner country share a common language, specifically Arabic. Despite a positive coefficient of 0.025 suggesting the presence of a common language is associated with higher exports from Lebanon to the partner country, it is important to note that the variable COMLIJ in the model is not statistically significant. This lack of significance indicates that the relationship between the presence of a common language and exports from Lebanon to the partner country may not be sufficiently strong to be considered significant at the chosen statistical level.

While a common language can potentially facilitate communication, business transactions, and cultural understanding between partners, the lack of statistical significance suggests that other factors in the model may have a more pronounced influence on export flows. The effect of a common language may be relatively modest or overshadowed by other variables. Further investigation is warranted to explore the reasons behind the lack of significance of COMLIJ and to identify other potential factors that play a more significant role in shaping trade dynamics between Lebanon and its partner countries.

Table No. 5: Results of Pooled OLS Regression

Dependent Variable: LOG(EXIJ)

Method: Panel Least Squares

Date: 07/28/23 Time: 09:54

Sample: 2003 2018

Periods included: 16

Cross-sections included: 35

Total panel (balanced) observations: 560

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(GDPI)	0.960786	0.220724	4.352877	0.0000
LOG(GDPJ)	0.138432	0.026710	5.182715	0.0000
LAND	0.720240	0.167717	4.294367	0.0000
LOG(POPJ)	0.122313	0.034521	3.543181	0.0004
LOG(POPI)	-1.634213	0.650459	-2.512398	0.0123
FREE__TRADEIJ	0.234221	0.099988	2.342493	0.0195
LOG(DISTIJ)	-0.355888	0.045754	-7.778284	0.0000
COMLIJ	0.025187	0.160660	0.156769	0.8755
C	16.25388	5.793908	2.805340	0.0052
R-squared	0.407507	Mean dependent var	17.52472	
Adjusted R-squared	0.398905	S.D. dependent var	1.056202	

As for the explanatory power of the model represented by the Adj. R² indicator, it amounted to 39.8%. We can consider that the model has an acceptable level of explaining the variation in Lebanon's exports to partner countries. This means that approximately 39.8% of the changes in the volume of exports can be attributed to the included independent variables such as GDP, population, distance, common language, free trade agreements, and road access. However, it is important to acknowledge that the explanatory power of the model is not exhaustive, and there are other possible factors that influence trade between Lebanon and its partners.

For example, political relations between countries can play an important role in the dynamics of trade. Positive diplomatic relations may increase trade cooperation, while political tensions or disputes may hinder trade flows. In addition, there could be other unobserved variables affecting trade that were not included in the model. These omitted variables may capture economic, social, cultural, or institutional factors that impact business relationships but were not considered in the current analysis. Moreover, economic conditions, market trends, technological advances, and changes in consumer preferences can also influence trade patterns both regionally and globally. It is critical to recognize these potential complexities and limitations and interpret model results with caution.

While a score of 39.8% indicates a significant part of the discrepancy, it does not reflect the overall complex trade dynamics between Lebanon and its partners. In conclusion, this value provides valuable insights into the determinants of export in Lebanon, indicating a moderate level of acceptance for the included independent variables. However, we must bear in mind the myriad of other factors, including political relations and unnoticed variables that may also significantly affect trade between Lebanon and its partners. To gain a comprehensive understanding of trade dynamics, further research, and analysis are warranted, incorporating a broader set of variables and taking into account the dynamic and evolving nature of international trade relations.



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