Санкт-Петербургский государственный университет

МОХАММАДИЯ Мохаммад Камаль

Выпускная квалификационная работа

ПРОЕКТНОЕ ФИНАНСИРОВАНИЕ В СИРИИ: ОБЗОР И ОСНОВНЫЕ ФАКТОРЫ

PROJECT FINANCE IN SYRIA: AN OVERVIEW AND KEY DRIVERS

Уровень образования: магистратура
Направление 38.04.08 «финансы и кредит»
Основная образовательная программа ВМ.5638 «финансовые рынки и банки»
Профиль «финансовые рынке: инструменты и технологии»

Научный руководитель:
к.э.н., доцент,
ТИТОВ Виктор Олегович

Рецензент:
директор, НП «Серебряное кольцо»
ИЕВЛЕВ Николай Витальевич

Санкт-Петербург

2020

TABLE OF CONTENTS

INTRODUCTION

Syria, officially the Syrian Arab Republic, is a country in the middle east, with a significant location at the heart of the trade site of the three continents of Asia, Europe, and Africa. Besides, the diversity of the terrain and its coastline on the Mediterranean Sea, making it one of the most attractive areas for investment.

The conflict in Syria has been going on for nine years. The results were brutal, main cities were severely damaged, infrastructure has been destroyed, factories and most services have been shut down, and the Syrian economy has shifted from a state economy to an informal economy.

It is difficult to give a precise figure on the cost of the crisis in Syria since March 2011, which may continue to increase, as the crisis is not over yet, not to mention the inability to count the current damage to infrastructure and thousands of residential, commercial, and industrial facilities.

ESCWA estimated the scale of destruction in physical capital and its sectoral distribution at more than $388 bn. However, statistics from local authorities, research centres, and international organisations show that the cost of the war on Syria is more than $400 bn, this amount is more than seven times the GDP of Syria in 2010 ($60.2 bn), the year before the crisis, which later led to a contraction of GDP of more than 60%.

To move to the new political and economic stage (stage of reconstruction). The post-crisis planners in Syria face many questions that revolve around the nature, foundations, objectives, and scope of the reconstruction process and its key participants. One of the most critical questions is how to finance the reconstruction process and what resources are available to the Syrian government to undertake such an enormous project.

In light of the limited internal options related to the ability to secure financial sources, the Syrian government may adopt a mechanism called “project finance”.

Despite the increasing trend in using project finance in the world, published empirical studies on the topic are limited.[1] The majority of these published articles and working papers are theoretical rather than practical studies, focusing primarily on a detailed examination of narrow individual aspects such as risk management, types of interaction schemes used between participants, contractual framework, and credit structure.

This thesis investigates the role of project finance as a driver of economic growth; it is beneficial to the least developed economies as it can compensate for the lack of domestic financial

[1] Megginson W.L. Introduction to the special issue on project finance. Review of Financial Economics, 2010.

development.[2] Over the years, project finance proved to be one of the innovative techniques in bridging the resource constraints faced by most governments in financing large developmental investments.

Project finance is unique in its contractual structure; it can substitute for underdeveloped financial markets. It is an efficient way to fund capital-intensive and strategically important projects such as long-term infrastructure, industrial, or public services projects. This financing method often funds the development of energy, natural resource, and social infrastructure assets, as well as the provision of associated public services. Kleimeier and Megginson indicated that project finance is mainly used in infrastructure and the utility sector, where it is easy to create project structures with identified cash flow streams.[3] H. Davis' work comprises 38 case studies of project financing covering power, water, resources, and infrastructure projects in various countries, which illustrate different aspects of project finance across the world.[4]

Project finance may contribute to the real economy in both direct and indirect ways. Directly, it contributes to GDP formation by increasing an economy's stock of capital and as an additional input in other sectors' production processes. Indirectly, project finance increases total factor productivity by reducing transaction and other costs and generating positive externalities, such as those derived from roads and public infrastructure, allowing more efficient use of conventional productive inputs. The lack of an adequate infrastructure can pose big constraints on growth.[5]

The relevance of the thesis. In order to accelerate the Syrian economy during the reconstruction phase, it is necessary to increase investment in capital-intensive and strategically important projects, such as long-term infrastructure, industrial projects, and utilities, which play a role in economic development progress.

The success of investment projects determines the effectiveness of the financing model; therefore, it is urgent to determine an adequate and modern mechanism for financing long-term high-risk infrastructure projects at the reconstruction stage. Such a mechanism can be project finance, which will accelerate the country's investment development, and increase the competitiveness of the economy.

Literature review. The formation of the thesis was influenced by the work of foreign and Russian authors on project financing. The research is made up of materials from the World Bank, the

[2] Kleimeier S., Versteeg R. Project finance as a driver of economic growth in low-income countries. 2010. P.2.
[3] Kleimeier S., Megginson W.L. Are project finance loans different from other syndicated credits? Journal of Applied Corporate Finance, 2000.
[4] Davis H.A. Project finance: Practical case studies. London: Euromoney Publications, 1996.
[5] Chan-Lau J.A., Kelhoffer K., Zhang J. Long-Run Economic Growth: Does Project Finance Matter 2016. P.3.

International Monetary Fund, the International Finance Corporation, international consulting and rating agencies, materials from books and journal articles, foreign periodicals Project Finance Magazine, the Central Bureau of Statistics in Syria, Syrian Central Bank, Syrian Ministry of Finance, and the Syrian Investment Agency.

P. Nevitt was one of the first authors to justify project financing, presenting the general theory of project financing. Many texts (S. Gatti, F. Fabozzi, A. Fight, M. Khan, R. Parra, M. Morrison, etc.) contain detailed descriptions, analyses, and examples of project financing, the works of B. Esti are highly specialized and mainly devoted to risk analysis. While the materials published by international financial organizations, such as the World Bank, are often presented in the form of databases, which must be analysed by the reader.

Among the works devoted to project financing in Russia, it is necessary to note the works of I. Nikonova, A. Smirnov, G. Kalmykova, V. Kasatonov, D. Morozov, V. Fauzer, I. Rodionov, etc. They examined the main features of project financing, presented practical examples of project financing in the CIS and abroad.[6] The modern tools for managing risks arising from implementing large investment projects and ways to minimize them are described.

Problem statement. The difficulty of the availability of funding and scarcity of financial resources and expertise has always been a barrier to the achievement of several development projects. It will be one of the obstacles to the reconstruction process in the Syrian Arab Republic, which require substantial financial resources, human expertise, material, and other equipment, are not available to the Syrian government.

The Syrian government issued many investment legislations that encourage investment, starting with the Investment Promotion Law No. 10 of 1991 and its amendments. The Syrian government also formed "The Syrian Investment Authority" under Legislative Decree No. 9 of 2007; this was accompanied by the issuance of Investment Promotion Decree No. 8 of 2007, which replaced the Investment Law No. 10 of 1991 and its amendments.

In general, these procedures aimed at encouraging foreign investments and granting investors generous tax incentives and exemptions. It provided investors with many facilities enabling the investor to set up investment projects with competitive economic interest.

[6] The Commonwealth of Independent States: Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, and Uzbekistan.

The research problem is mainly the current crisis in Syria, and the resulting destruction and losses, which in the next stage inevitably necessitate planning for the reconstruction process and how to secure funding for this process.

The purpose of the thesis. The purpose of the research is the justification of an integrated approach to project finance of investment reconstruction projects in Syria.

In general, this research aims to solve the following problems:

1. To structure scientific approaches to understanding the essence of project finance; (1.1+1.2)
2. Identify the advantages and disadvantages of project finance in comparison with other models for financing investment projects; (1.3)
3. Identify the features of project finance in the world and Arab countries, mainly in the GCC region; (2.1+2.2+2.3)
4. Clarify the reality of the Syrian economy since the beginning of the war in 2011, in terms of losses and damages, size of the available national resources, required investments, and the necessary financing; (3.1+3.2)
5. Analyse the investment environment in Syria and clarification of investment opportunities available to capital; (3.3)
6. Substantiate the author's approach to the implementation of project finance in Syria using model mathematical tools; (3.2+3.3+3.4)

Research methodology. The theoretical basis of the research is the work of leading experts in the field of project finance, corporate finance theory, Islamic finance, financial markets, economic and mathematical modelling, as well as laws and regulations of the Syrian government and many Arab countries.

The thesis employed methods of scientific knowledge as observation, statistical analysis, regression modelling, theoretical analysis, comparative analysis, economic-statistical analyses, the generalization of scientific and statistical data, and presentation of theoretical and empirical knowledge in the form of a scientific text. The author analysed historical data on the size, dynamics, and structure of project financing in the world, particularly in the GCC countries. The economic indicators data that reflects the effects of the Syrian economic crisis has also been investigated.

Significance of the research. The results of this research can contribute effectively to shed light on the international experience of project finance and clarify the strengths and weaknesses in them. To enable the necessary reforms to be introduced in the policies used in planning the reconstruction process to advance and develop the investment climate.

This research may prove to be useful in identifying the investment situation in Syria, highlighting the advantages of project finance and the purpose of attracting it. To recommend the most important procedures, which may help to attract and develop project finance in Syria.

The practical significance of the thesis. The thesis's practical significance lies in a comprehensive study of the possibility of applying project financing at the reconstruction stage in Syria. The proposed project finance mechanism can be reviewed and applied by the Syrian government's legislative and executive bodies.

The thesis presents an ideology of creating an evaluation of an investment program within the framework of a project financing system in the Syrian reconstruction phase.

Publications on the topic of the thesis. The author published an article in a journal included in the list of Russian peer-reviewed scientific publications approved by the Higher Attestation Commission of the Russian Federation.

The volume and structure of the thesis. The thesis consists of an introduction, three chapters, a conclusion, and the list of references, including 112 titles, five appendices. The content of the work is set out on 74 pages, including 13 tables, 13 figures.

CHAPTER 1. OVERVIEW OF THE PROJECT FINANCE

1.1 Definitions, origins, and the reasons behind applying project finance

Existing literature suggests many definitions of project finance. According to Triantis, project finance is the art and skill of piecing together new business development elements, financial engineering techniques, and a web of contractual agreements to develop ambitious projects and make the right decisions to raise funding for industrial or infrastructure projects on a limited/nonrecourse basis. Lenders look to the cash flow for loan repayment and the project assets for collateral.[7]

Finnerty contends that: Project finance may be defined as the raising of funds on a limited-recourse or nonrecourse basis to finance an economically separable capital investment project. The funds' providers look primarily to the project cash flow as the source of funds to service their loans and provide the return of and a return on their equity invested in the project.[8] From this definition, nonrecourse debt is based on the cash flows and the project's income rather than the credit of the project sponsor.

Yescombe defines project finance as a method of raising long-term debt financing for major projects through financial engineering, based on lending against the cash flow generated by the project alone. It depends on a detailed evaluation of a project's construction, operating and revenue risks, and their allocation between investors, lenders, and other parties through contractual and other arrangements.[9]

It is a well-established technique for long-term financing of capital-intensive projects such as infrastructure (e.g., road, rail, port, airports), natural resources (e.g., mining, oil & gas), energy (e.g., power plants, wind farms, and other renewables), and more recently social infrastructure (e.g., school, prison, health). It is used by both the public and private sectors.

Megginson argues that what distinguishes project finance from other types of financing is that debts are expected to be paid by the project itself and not by the government repay the project debts as well as risk-sharing feature of project finance between creditors. Elsewhere Megginson argues that project finance is perceived as an efficient method of obtaining long-term, relatively low-cost financing for capital intensive projects in risky countries.[10]

---

[7] Triantis J.R. Project finance for business development. John Wiley & Sons, 2018. P.3.
[8] Finnerty J.D. Project financing: Asset-based financial engineering. John Wiley & Sons, 2013.
[9] Yescombe E.R. Public-Private Partnerships: principles of policy and finance. 2007. P.113.
[10] Megginson W.L. Ibid.

So, the principles of project finance can be summarized as:[11]

- The project usually relates to significant infrastructure with a long construction period and long operating life. It means that the financing must also be for the long term (typically 15-25 years).
- Lenders rely on the future cash flow projected to be generated by the project to pay their interest and fees and repay their debt.
- There is a high ratio of debt to equity "leverage"; project finance debt may cover 70-90% of the project's capital cost.
- The Project Company's physical assets are likely to be worth much less than the debt if they are sold off after a default on the financing; in projects involving public infrastructure, they cannot be sold.
- The project has a finite life, based on such factors as the length of the contracts or licenses, or reserves of natural resources. So, the project-finance debt must be fully repaid by the end of the project's life.
- There are no guarantees from the investors in the project company for the project debt. So, this is "nonrecourse" finance.

The life of a project can be divided into three phases:[12]

1. **Development.** When the project is conceived, the project contracts are negotiated, signed, and come into effect. The equity and project's debt are put in place and available for drawing. This phase is more complicated than it might appear at first sight and can run smoothly for several years.
2. **Construction.** The period during which the project finance is drawn down and the project is built.
3. **Operation**. The period during which the project operates commercially and produces cash flow to pay the lenders' debt interest and principal repayments and the investors' equity return.

With the explosion of project financing in the late 1980s and 1990s around the world, there is a temptation to think that the project finance term is a relatively new concept. However, this is far from being true; indeed, the first recorded use of project finance was probably in 1800 BC, about 3800 years ago. Under the Code of Hammurabi, ship-owners used to raise money for vessel construction, applying a form of mortgage finance known as "bottomry", loans were paid back from

[11] Yescombe E.R. Principles of project finance. Academic Press, 2013. P.8.
[12] Yescombe E.R. Ibid. P.29.

the revenues derived from commercial trading. If the ship was lost during a voyage, before the full repayment of loans, any remaining balances due to the lender were discharge. This early evidence of project financing techniques was still in use during the Roman era.[13] Modern project finance dates back to the development of railroads in America from 1840 to 1870.[14]

In the 1970s, project finance spread to Europe, the first event that is well recognized as a modern project financing was the British Petroleum Development funding for the Forties Field of the North Sea Oil find, initiated in 1971.[15] By the late 1970s and early 1980s, what had started as a modest number of transactions, had turned into a significant volume of project financing related to oil and gas fields. The 1980s saw remarkable growth in project finance, with power projects, infrastructure projects, transportation projects, and at the end of that decade, telecommunications projects were leading the way. This state was continued throughout the 1990s until the recent global financial crisis, which saw considerable growth in project finance, not only in Europe and the US but also throughout Southeast Asia and elsewhere.

Project finance can be more leveraged than traditional financing, resulting in a lower cost of financing. In countries with power and other infrastructure needs, project finance allows governments to provide some support without taking on additional direct debt. By using a technique of project finance such as BOT "Build Operate and Transfer", where an organization constructs and operates the project within a specified period after which the project is transferred to the government. The growth of project finance in recent years has coincided with a trend toward privatization.

Therefore, project finance has many attractions for the host government, including the following:[16]

- The attraction of foreign investment.
- Acquisition of foreign skills.
- Reduce public sector borrowing requirements by relying on foreign or private financing for projects.
- The possibility of developing what may not be a priority project.
- Training for the local workforce.

[13] Bernstein P.L., Bernstein P.L. Against the Gods: The remarkable story of risk. New York: Wiley, 1996. p.92.
[14] Gatti S. Project finance in theory and practice: designing, structuring, and financing private and public projects. Academic Press, 2012. P.27.
[15] Morgan R.S. Project finance: analysis and cases. Doctoral dissertation, Massachusetts Institute of Technology, 1976. P.17.
[16] Sapte D.W. A guide to Project Finance. London: Denton Wilde Sapte, 2004. P.6.

For sponsors, project finance is invariably much more costly than raising corporate funding. It takes considerably more time to organize and involves a considerable dedication of management time and expertise in implementing, monitoring, and administering the loan during the project's life. But project finance may accomplish one or more of the following objectives:

- Finance a joint venture.
- Undertake a project that is too big for one sponsor.
- Allow a high level of risk allocation among participants in the transaction.
- Legitimately avoid the tax, the more the debt is, the less the tax is.
- Insulate corporate assets from project risk.
- Keep the debt off the corporate balance sheet.
- Protect corporate borrowing capacity.
- Maintain the credit rating.
- Improve corporate return on equity (ROE).
- Restrict proprietary information to a limited number of investors.
- Tax advantages (e.g., tax holidays, tax concessions).
- Establish a business venture in a foreign country.

As a result of this unique feature of project finance, the volume and number of transactions have witnessed a considerable increase in most emerging and developing economies. In 2018, for example, Russia, China, Egypt, and India had signed 61 finance project deals worth over $15 bn.[17]

1.2 Finance as an element of comparative financial structures

Another way to understand project finance is to relate it to corporate finance. The main difference between corporate finance and project finance is that, while the entire corporate balance sheet is considered when determining debt capacity and defining collateral in the case of corporate financing, only the project itself is responsible for project finance debt. *Table 1.1* summarizes the key differences between the two types of financing.

In addition to differences in collateral, the accounting treatment differs between the two structures. Corporate finance debt is presented on-balance-sheet, while project finance under certain conditions is an off-balance-sheet for the sponsor. In comparison, corporate debt capacity is affected by the soundness of the company, its relations to customers, profitability of all activities, and its assets. Control and monitoring differ in corporate finance and project finance, in a conventional

[17] Project Finance International PFI. Annual League Tables. 2018. P.10.

organisation, the management is in control, and monitoring is done by the board of directors, rarely by the investors directly. In project financed ventures, management control is limited, and monitoring increased. The transparent nature of project companies and the covenants imposed by project debt enables the creditors to perform closer monitoring. Financial flexibility is another area where the two structures differ; financing can be arranged quicker in corporate finance compared to project finance, where the process is more time-consuming due to a thorough due diligence process and contractual negotiations.

Table 1.1

Main differences between project finance and corporate finance

Point of comparison	**Corporate finance**	**Project finance**
Financing vehicle	Multi-purpose organization	Single-purpose entity
Type of capital	Permanent - an indefinite time horizon for equity	Finite-time horizon matches the life of the project
Collateral for financing	Borrower's assets	Project's assets
Capital investment decisions	Opaque to creditors	Highly transparent to creditors
Accounting treatment of equity at the sponsor level	On-balance sheet	Off-balance sheet
Main variables considered when granting credit	Customer relations, financial soundness, profitability, company assets	Future cash flows
Cost of capital	Relatively lower	Relatively higher
Investor/lender base	Typically, broader participation, deep secondary markets	Typically, a smaller group, limited secondary markets
Control and monitoring	Corporate performance monitored by the board of directors on behalf of the shareholders	Control by management but bound by contractual arrangements that facilitate monitoring by investors
Financial flexibility	Financing can typically be arranged quickly	Higher information, contracting, and transaction costs are involved

Sources: compiled by the author based on Caselli and Gatti.[18]

Forfaiting, which is the sale of claims (namely the private contractor's receivables from the PPP contract with the public procurer) to a bank which consequently has to collect unitary payments from the public partner. Forfaiting in PPPs is combined with a waiver of claims (also called a waiver of

[18] Caselli S., Gatti S., editors. Structured finance: Techniques, products and market. Springer, 2017. P.30.

objection), which is an agreement specifying that the public procurer waives its right to reduce or suspend the unitary payments in case of deficient performance by the private contractor.

Under project finance and Forfaiting, the high capital investment phase is mostly financed with debt "highly leveraged projects", *Table 1.2* provides an overview of the differences between project finance and forfaiting.

Table 1.2

Main differences between project finance and corporate finance forfaiting

Point of comparison	Project finance	Forfaiting
Risk allocation	High level of risk allocation	Low level of risk allocation
The risk for the banks, private and public partner	Banks: high Private partner: moderate Public partner: low	Banks: low Private partner: low to moderate Public partner: high
Leverage	High level: 70-90%	High level: 70-90%, and in some cases extremely high level: > 90%
Debt guarantees	Complex security system using different instruments such as Step-in-Rights, reserve accounts	Less complex security system, no reserve accounts
Due diligence	Extensive due diligence by banks	Low degree of due diligence by banks
Transaction costs and time	high due to extensive screening of project by banks	Low due to the low degree of due diligence by banks
Equity investors	A low number of sponsors, financial investors	A low number of sponsors, no financial investors
Financing costs	High including interest, commitment and arrangement fee, documentation and processing fee	Low including interest, cost of hedging and a structuring fee
Financing conditions	Inferior financing conditions (floating interest rate, no match of debt maturity and project duration)	Good financing conditions (rather fixed interest rate, the match between debt maturity and project duration)
Payments by the public partner in case of non-performance	Can be cut according to bonus/malus agreements in the contract	Cannot be cut for construction services but for other receivables which are not sold to the bank
Impact of the financial crisis	High impact on financing conditions, projects often are not feasible	Low impact on financing conditions, projects are still feasible

Sources: compiled by the author based on Busse.[19]

[19] Busse J. Forfaiting: an alternative financing model to project finance for PPPs? Doctoral dissertation, Universidade Católica Portuguesa, 2014. P.22.

One of the main advantages and fundamental characteristics of Project Finance is the transfer of risks to the party, who can manage it better, leading to improved risk allocation. Consequently, most of the risks are transferred to the lenders and the private party, where the debt must be repaid with the cash flows generated by the project company. However, the main disadvantage of Project finance over forfaiting is its worse financing conditions, including higher financing costs. Moreover, extensive due diligence involves high transaction costs and time.

One area of modern innovation is the use of Islamic or Sharia finance-compliant finance, Islamic financial sector showed double growth during the crisis of 2008 compared to the traditional sector.[20] The basic principles of Islamic finance are:

- Prohibition of Riba. Riba is the increase in a transaction on a loan or sale, that accrues to the lender or seller, without providing an equivalent counter value to the other party.
- Prohibition of Gharar, which is usually due to the uncertainty, ignorance, and lack of transparency, inadvertently leads to deception in a commercial transaction and fraud.
- Prohibition of Maysir, it means the exclusion of financing and dealing in gambling activities (casino games, lotteries).
- Money in an Islamic economy has no intrinsic value; its principal purpose is as a medium of exchange.[21]
- Materiality, Islamic finance is real-economy-oriented, as all transactions must be asset-linked (asset-backed or asset-based).[22]

Islamic financing operations differ from traditional in many respects, unlike traditional financing that operates based on borrowing and lending at predetermined interest rates. Islamic financing comes with loan holders receiving a return to be determined later by profitability. The Islamic financial system requires transactions to be linked to the real sector, leading to fruitful activities that produce income and wealth. Moreover, the Islamic finance operations also use several contracts such as: “Murabaha”- sales contracts with profit margin; “Istisna'a”- an agreement to manufacture; “Ijara”- a financial lease, “Musharaka”- participation in the profits and losses; “Mudaraba”- participation in the profits and bear the losses; “Wakala”- Fee-based services; and “Sukuk”- Islamic bonds.

[20] Hassan M., Dridi J. The effects of the global financial crisis on Islamic and conventional banks: A comparative study. IMF Working Paper, 2010. P.20.
[21] Alexander A.J. Shifting title and risk: Islamic project finance with western partners. Mich. J. Int'l L. 2010. P.574.
[22] Farooq M.O., Selim M. Conceptualization of the real economy and Islamic finance: Transformation beyond the asset-link rhetoric. Thunderbird International Business Review. 2019. P.695.

Sukuk is an asset-backed instrument representing a beneficial ownership interest in an underlying asset; it is a certificate that appears like a traditional bond or asset-backed security but is technically neither debt nor equity. Sukuk is typically combined with other forms of Islamic finance.

Therefore, Islamic project financing can be considered as project finance by Sharia principles. Islamic project finance has grown in significance and is now widely used to finance large, longer-term infrastructure and power generation projects, especially in the Middle East region with the main focus on the Gulf Cooperation Council (GCC) countries.[23] Several factors contributed to the growth of Islamic finance projects, including:

- Growth in Islamic financial institutions that provide financial services under the principles of Islamic Sharia.
- High liquidity of Islamic financial institutions, which allows them to participate in long-term projects.
- Increasing consumer demand for Sharia-compliant financial services and products.
- The nature of capital-intensive projects in the Middle East.

Despite the complexity inherent in the financing nature, some contend that every project financing can be fitted into the same basic structure and essentially has the same components.

It is possible to identify the following participants in project finance:[24]

Project company. It is the legal entity that will own, develop, construct, operate, and maintain the project. It is controlled by project sponsors, as the center of the project through its contractual arrangements with operators, contractors, suppliers, and customers.

Project sponsors. They are generally the project's owners with an equity stake in the project, receiving profit either via equity ownership (dividend streams) or management contracts (fees). Typical sponsors include foreign multinationals, local companies, contractors, operators, suppliers, or other participants. The World Bank estimates that the equity stake of sponsors is typically about 30 per cent of project costs.[25] Because project financings use the project company as the financing vehicle and raise nonrecourse debt, the project sponsors do not put their corporate balance sheets directly at risk in these projects. However, some project sponsors incur indirect risk by financing their equity or debt contributions through corporate balance sheets.

[23] Islamic financial policy. In: Dar H., Azmi S., Bushra Shafique B., eds. Global Islamic financial report 2016.
[24] Not all organizations are necessarily involved.
[25] World Bank. World Development Report 1994: Infrastructure for Development: Executive Summary. World Bank, 1994. P.95.

Equity investors. They may be lenders or project sponsors. In the case of lenders, they are putting equity alongside their debt to obtain an enhanced return if the project is successful. Most of the investors are development or equity funds, diversifying their portfolios by investing in many projects.

Contractor. The contractor is responsible for constructing the project to the technical specifications outlined in the contract with the project company. In many large projects, consortia of constructors may become involved either for sheer economies of scale or for other reasons. In such cases, lenders prefer members of the consortia to undertake joint and liability since the risk of failure of performance is the responsibility of each consortium member.[26]

Host governments. It is the government of the country in which the project is located. The host government is typically involved as an issuer of permits, licenses, authorizations, environmental licenses, tax holidays, supply, guarantees, and concessions. In some projects, the host government is an owner of the project, or it will become the owner of the project at the end of a specified period, such as in a build-own transfer (BOT) structure. It might also be involved as an off-take purchaser or as a supplier of raw materials or fuel.

Suppliers. They provide raw materials and the critical input to the project since supply arrangements are key to project success, project sponsors and lenders are concerned with the underlying economic feasibility of supply arrangements. But the supplier does not necessarily have to supply a tangible commodity; in the case of a mine, the supplier might be the government through a mining concession. For toll roads or pipelines, the critical input is the right-of-way for construction, which the host government grants.

Customers or purchasers. In large projects, the project company will seek in advance to conclude long term agreements to sell goods or services being produced by the project (e.g., selling coal to electric power plants). It is known as an "off-take agreement." the output purchaser provides a crucial element of the credit support for the underlying financing by seeking to stabilize the raw materials' acquisition over time and protect itself from market volatility. Such support can be seen as a credit enhancement (such as guarantees) to make the project more attractive to the financing banks.[27]

Commercial banks. Commercial banks represent a primary source of funds for project financings. In arranging these large loans, the banks often form syndicates to sell-down their interests. The syndicate is essential for raising the large amounts of capital required. Even though commercial

[26] Fight A. Introduction to project finance. Elsevier, 2005. P.18.
[27] Fight A. Ibid. P.31.

banks are not generally very comfortable with taking long term project finance risk, they are very comfortable with financing projects through the construction period. Besides, a project might be better served by having commercial banks finance the construction phase because banks have expertise in loan monitoring on a month-to-month basis.[28]

Capital markets. Major investment banks have recently completed many capital markets issues for international infrastructure projects; the banks have successfully raised capital from institutional investors. The capital market route can be cheaper and quicker than arranging a bank loan. Also, the credit agreement under a capital market is often less restrictive than that in a bank loan. Furthermore, these financing might be for longer periods than commercial bank lending; they might offer fixed interest rates and access to a wider pool of available capital and investors, such as pension funds.[29]

The project may include the following contracts:[30]

- **A Project Agreement**: This may be either an **Off-take Contract** (e.g., a power purchase agreement), under which the product produced by the project will be sold on a long-term pricing formula. Or a **Concession Agreement** with the government or another public authority, which gives the project company the right to construct the project and earn revenues from it by providing a service either to the public sector (e.g., a public building) or directly to the general public (e.g., a toll road).
- Alternatively, the project company may have a **license** to operate under the terms of general legislation for the industry sector (e.g., a mobile phone network).
- **A Turnkey Engineering**: Procurement and Construction (EPC) contract, here, the project will be designed and built for a fixed cost and will be completed by a fixed date.
- **An Input Supply Contract**: under which fuel or other raw material for the project will be provided on a long-term pricing formula in agreed quantities.
- **An Operating and Maintenance (O&M) Contract**: under which a third party will be responsible for the running of the project after it has been built.
- **A Government Support Agreement**: (usually in a developing country), it may provide various kinds of support, such as guarantees or tax incentives for the investment in the project.

Historically, commercial banks have provided construction financing for projects, while insurance companies have provided funding with terms of 20 years or more. Banks have been

[28] Comer B. Project Finance teaching note. 1996. P.12.
[29] Comer B. Ibid. P.13.
[30] Yescombe E.R. Ibid. P.9.

relatively more comfortable with construction risks and short-term loans. In contrast, insurance companies have been more comfortable bearing the long-term operating risks after construction has been completed, and the project has demonstrated its capability to run smoothly.

In the early 1990s, however, the investor base for project finance began to broaden. It now includes institutional investors, such as pension and mutual funds, and investors in the public bond markets in a growing number of countries worldwide.[31] For institutional investors, project finance offers a way to diversify and earn outstanding returns for the amount of risk taken. As more power and other infrastructure projects are financed and demonstrate a track record, more investors are becoming comfortable with the risk.

There is a wide range of funding sources for debt and equity in both public and private markets available to a project:

1. **Equity**

Equity financing allows organizations to obtain funds without incurring debt, in other words, without having to repay a specific amount of money at any particular time. A project cannot pay dividends before operations start, and lenders typically restrict the payment of dividends during the early years of operation, until the debt has been substantially repaid. Lenders demand that all available free cash flow should be applied first to repay project debt. Consequently, if the project requires a long construction period, equity investors will have to accept delayed dividends.

Equity may be public or private, as well as in the form of preferred stocks and common stocks. Equity investors in a project usually are those groups who will benefit directly from the operations of the project: like the purchasers of the project's output, or the owners of any natural resource reserve the project will utilize.

Lenders look to the equity investment as providing a margin of safety. They have two primary motivations for requiring equity investments in projects that they finance:[32]

- The more burden the debt service puts on the project's cash flow, the greater the lenders' risk.
- Lenders want investors to have enough at stake to motivate them to see the project through to a successful conclusion.

[31] Davis H.A. Ibid. P.6.
[32] Nevitt P.K., Fabozzi F.J. Project financing. London, U.K.: Euromoney Books, 2000. P.99.

2. Debt

Diverse providers of debt might be appropriate for the three different phases of the project. The most important sources of debt are:

A. Commercial banks

Term loans are a common type of commercial bank loan; it is a business loan with a maturity of more than one year, repayable according to a specified schedule. Syndicates of international commercial banks often make large bank loans, where several banks undertake to provide a loan to a customer under identical terms and conditions. The advantage of syndicating a loan is that large amounts of debt can be raised. The disadvantage is that they typically provide floating-rate obligations at a higher cost than the fixed-rate alternative offered by bonds.

B. Fixed-rate debt market

In recent years, the importance of the fixed-rate debt market has increased. It can offer cheaper and longer alternatives than commercial banks. What limits its capacity is the difficulty to rate bonds for international project financing. The rating indicates the likelihood that a bond's issuer will be able to meet scheduled interest repayments. It is based on an analysis of the issuer's financial condition and profit potential.

3. Build-Operate-Transfer (BOT)[33]

Build-own-operate-transfer (BOOT) or build-operate-transfer (BOT) is a form of project financing, wherein a private entity receives a concession from the private or public sector to finance, design, construct, and manage a facility stated in the concession contract. It enables the project investors to recover their investment, operating, and maintenance expenses in the project. Due to the long-term nature of the arrangement, the money is usually raised during the concession period. The return rate is often tied to a combination of internal and external variables.

In the concession phase, the project company gets the concession from the government and signs the contract with the government. This contract can be seen as the warranty for the project company to borrow the loans and use the money from other investors. In the financing phase, the project company gets the money and signs the contracts with parties such as contractors and suppliers and pays them with the money gained from the bank and investors. In the project operation phase, the project company uses the cash earned from operating the project product to pay banks and investors back. When the concession is over, the project will be transferred to the government.

[33] Wang S. Project Investment and Project Financing: A study on Business Case and Financing Models. Master thesis, 2012. P.60.

4. Asset-Backed Securities (ABS)[34]

An asset-backed security is a security whose value and income payments are derived and collateralized or backed by a specified pool of underlying assets. The pool of assets is typically a group of small and illiquid assets that cannot be sold individually. Pooling the assets into financial instruments allows them to be sold to general investors with a process called securitization, allowing the risk of investing in the underlying assets to be diversified. Each security will represent a fraction of the total value of the diverse pool of underlying assets.

A separate institution, called a special purpose vehicle (SPV), is often created to handle the securitization of asset-backed securities by commercial banks. The special purpose vehicle which originates and sells the securities uses the proceeds of the sale to pay back the project company whose future cash flow has been sold to SPV.

5. Government support[35]

Government support available for projects exists in various forms. According to Khan and Parra, governments provide financial support through government guarantees, equity participation, government debt, grants, and preferential tax treatment. Government guarantees and financial support play a critical role, especially for the development of new technologies. In addition to governmental initiatives, bilateral institutions also play a part in project finance, either in the form of Export Credit Agencies (ECA) or investment promotion agencies. ECAs provide direct loans as well as guarantees and insurance to encourage exports from the respective home country.

1.3 Advantages and disadvantages of project finance

Substantial investments and development of existing infrastructure are becoming increasingly necessary in all parts of the world, which requires a massive amount of capital. Project finance is an ideal financing model for financing large infrastructure and capital-intensive projects such as energy, transportation other industries in the world, where the strong demand for infrastructure and civil engineering projects exceed the available economic resources. Some advantages of project financing include:

- Provides project credit sources that will not be available to the sponsor.

[34] Wang S. Ibid. P.61.
[35] Khan M.F., Parra R.J. Financing large projects: using project finance techniques and practices. Singapore, Pearson Prentice Hall, 2003. P.181.

- Regarding the sponsor, the nature of the project as it is an off-balance sheet enables sponsors to enjoy several advantages; it protects the project sponsor from any negative impact from the project in the event of failure or default, and the sponsor's financial flexibility remains intact.[36]
- Achieve better financial conditions when the credit risk of the project is better than the sponsors' credit standing.
- Project finance is used to increases the return on equity in a project by leveraging the investment to a greater extent than would be possible in traditional commercial financing. Although higher leverage also increases equity risk.
- Project finance, in some circumstances, may have tax benefits.[37]
- Reduce costs since this mechanism allows you to reduce the impact of the agency problem (most of these conflicts relate to investment decisions or productivity).[38]
- Regarding banking institutions that take part in the project financing mechanism will attract and have a long-term collaboration with clients of priority and strategically important sectors of the economy. Thus, project financing can become a significant competitive advantage of financial institutions because of their long-term basis and service to reputable clients.[39]

Besides the previous advantages of using project finance, Finnerty presents a few other advantages:[40]

a. Obtaining economic rent

One of the advantages of project finance is reflected in implementing this financing model in the natural resources exploiting. The legal entity that controls the natural resource deposit can arrange long-term sale contracts that support the project financing, by earning an excess return above the average return on the invested funds. Economists define this portion of the excess return that is higher than expected as "economic rent".

b. Achieving an economy of scope

When more than a manufacturer joins each other to build a new facility in the economy's presence of scope in production, for instance, two aluminum producers might decide to construct a factory near a site where each has a large quantity of bauxite. Another example is the companies in a

[36] Gatti S. Ibid. P.31.
[37] Esty B.C. The economic motivations for using project finance. Harvard Business School. 2003. P.22.
[38] Титов В.О. Проектное финансирование инновационных инвестиционных проектов. Докторская диссертация, Санкт-Петербург, 2014. С.53.
[39] Смирнов А.Л. Проектное финансирование: инструменты и технологии. Монография. М.: МАКС Пресс, 2013. С.104.
[40] Finnerty J.D. Ibid. p.24-28.

highly industrialized area; they may decide to cooperate to form a joint venture, with each firm agreeing to buy steam to meet its own needs for heat and the group selling all the excess electricity to the local electric utility.

c. Risk allocation

A joint venture allows the sponsors to share the project risk; if the project's cost is high concerning the sponsor's capitalization, the decision to undertake the project alone might seriously endanger the sponsor's future. Similarly, the project may be too large for the host country to finance from the country's sources. Consequently, to reduce its risk exposure, the sponsor or host country can search for partners to form a joint venture.

d. Expanding debt capacity

Project financing allows the project sponsor to finance the project on someone else's credit. The funds for the project are raised based on the contractual commitments when the buyers enter a long-term contract to purchase the project's products or services, and when the contract provisions are set in such a way to ensure adequate cash flow to the project, enabling it to service its debt fully under all conditions. If any unforeseen contingencies and the cash flow are inadequate, additional credit support agreements are required, or a foundation is established to support the project financing.

The project company may finance with significantly greater leverage than would be reasonable in the sponsor's capitalization. Leverage that a project can achieve depends on the collateral level, the risks that the creditworthy participants are exposed to, the project type, and the profitability.

e. Lower overall cost of funds

If the project financing is more effective at resolving the agency problems inherent in financing a particular project, the project will be able to borrow funds at a lower cost than the project sponsors could. Also, to the extent the project entity can achieve higher leverage than the sponsors can comfortably maintain on their own, the project's cost of capital will enjoy the substitution of lower-cost debt for equity.

f. Release of free cash flow

The project entity's life is limited. Its “dividend policy” is usually specified contractually at the time any external equity financing is arranged. Cash flow that is not required to cover operating expenses, debt service, or make capital improvements “so-called free cash flow” is distributed to the project's equity investors. Thus, the equity investors, rather than professional managers, decide how the project's free cash flow will be reinvested.

Project finance eliminates the discretion of the company's board of directors and gives more freedom to the investors to decide the distribution of the cash flow obtained. Simultaneously, with the reduction of the risk that the free cash flow can be retained and reinvested without the capital investors' consent, the project's equity capital costs are reduced.

However, the sponsor can negotiate with the investors about new projects that are believed to be profitable; he can negotiate to finance these projects with the equity investors. If they agree to fund any of these additional investments within the project entity, the dividend requirement can be waived by mutual agreement and the funds invested accordingly.

g. Reduced cost of resolving financial disorders

The structure of a project's liabilities is less complex than the sponsor's liabilities, as the structure of the project entity mainly includes one class of debt. In general, the time and cost required to resolve financial disorders increase with the rise in the number of claimants and with the complexity of the debtor's capital structure. An independent entity with one principal class of debt, particularly if the debt is held privately by a few financial institutions, tends to easily get out of financial disorders.

h. Reduced legal costs

Certain types of projects, like cogeneration projects, include legal and regulatory costs that will be borne more cheaply by experienced sponsors. For instance, chemical and petroleum companies that undertake a cogeneration project on its own would face considerable costs that result from the ignorance of the technology and regulatory requirements; the economic sustainability of the project will depend on the further cooperation with regulatory bodies (which must approve the terms on which the electric utility company purchases the cogeneration project's excess electricity). When managed expertly, project financing can lead to economies of scale in controlling legal and regulatory costs, as they can apply the knowledge and experience gained in earlier cogeneration projects.

Disadvantages of project finance. So far, we have focused on the advantages and motivations of using project finance. However, there are also costs to be considered and cases in which project finance is less appropriate.

Project finance is more time-consuming and requires higher transaction costs. According to Esty, it takes 6 to 18 months more, to establish a separate project organization than to set up a project within an existing organization. Esty notes that transaction costs usually amount to 3-5% of the

amount invested, and may reach 10% for small and innovative projects.[41] One of the reasons for the long process and high transaction costs is the widespread use of contracts and documents and, hence, high legal costs. These shortcomings make project finance less appropriate for small projects since a smaller scale makes the structure less profitable.

Hoffman discusses the disadvantages of increasing the supervision of lenders. Because lenders take greater risks in financing the project, they will also demand more supervision of the project. More landers' participation involves careful monitoring of covenants, strict reporting, and documentation requirements.[42]

It is possible to identify the following disadvantages of project finance:

- The negotiation and documentation associated with project finance are always lengthy and complex.
- Increased control by lenders, investors at all stages of the project life cycle.[43]
- Higher transaction costs, it is more costly than the corporate financing structure.
- High costs for the analysis of the feasibility and effectiveness of the project and its expertise.
- Insurance plays an essential role for lenders and equity investors; this may be very expensive compared to other financing structures.

[41] Esty B.C. Ibid. P.9.
[42] Hoffman S.L. The law and business of international project finance: a resource for governments, sponsors, lawyers, and project participants. Cambridge University Press, 2007. P.79.
[43] Шиукашвили, Т.Т., Кравченко М.А. Преимущества и недостатки проектного финансирования. Экономика и социум. 2016(7):383-5. С.385.

Summary

The first chapter consists of three paragraphs, namely: definitions, origins, and the reasons behind applying project finance; finance as an element of comparative financial structures; and advantages and disadvantages of project finance.

This chapter attempted to define the concept of project finance, which is a source of finance that involves special features separating it from the other types of finance. The capital structure in a project financed venture typically involves a high debt level, often as much as 70 – 90 % of the total capital. In most cases, the debt is provided by commercial banks, but the capital market is also available for projects. The remainder of the capital structure is often equity provided by the sponsors; it can also be provided through government support.

Another critical aspect of project finance is the widespread use of contracts. Project finance involves many participants, and contracts contribute to regulate relationships and define responsibilities.

Project finance differs from other financial structures in several respects, such as collateral for the debt, leverage, transaction costs, etc. These differences lead to numerous advantages and disadvantages of using the project finance mechanism.

Project finance is more efficient in allocating the risk and the revenue compared with the other financial structures; it is also accompanied by higher transaction costs than conventional financing, which is mostly related to the stipulation of contract obligations. The cost of control is also an important issue; hence, it is clear that project finance as a financing model is suitable for large projects where it is possible to earn enough returns to cover necessary expenses and higher transaction costs. Consequently, project finance is an appropriate choice when it comes to financing infrastructure projects.

CHAPTER 2. PROJECT FINANCE ANALYSIS IN THE ARAB COUNTRIES AND THE REST OF THE WORLD

2.1 The development of project finance in the world

Project financing as a form of investment organization is becoming particularly important in the context of globalization. The application of project financing methods in the mechanism of public-private partnerships is one of the most promising areas for implementing the most priority programs of social-economic development. In this regard, the current state of the global project finance market indicators is meaningful.

The synthesis and analysis of data on project financing are significantly complicated due to the difficulty of identifying compliance with the characteristics of project finance. The only systematic source of information that can be formalized is data on loans attracted for project finance purposes, which are often classified according to the purposes of obtaining a loan declared by the borrower. This information on transactions is available through several organizations such as Thomson Reuters,[44] which publish regular information on transactions' activity and compile league tables that summarise the key players' activities in the market. *Table 2.1* summarises the project finance market information for 1995-2018 from Thomson Reuters.

Table 2.1

Size and number of project finance transactions in 1995-2018

Year	Total loans ($ bn)	Annual change %	Number of trans-actions	Number of countries	Year	Total loans ($ bn)	Annual change %	Number of trans-actions	Number of countries
1995	23.33	-	-	36	**2007**	219.99	21.8%	616	75
1996	42.83	83.6%	-	36	**2008**	250.56	13.9%	689	77
1997	67.43	57.4%	-	49	**2009**	139.19	-44.4%	461	63
1998	56.65	-16%	-	57	**2010**	208.17	49.6%	598	62
1999	72.39	27.8%	-	56	**2011**	213.49	2.6%	615	70
2000	110.89	53.2%	-	55	**2012**	198.75	-6.9%	538	61
2001	108.48	-2.2%	314	66	**2013**	203.03	2.2%	584	69
2002	62.17	-42.7%	284	65	**2014**	260.25	28.2%	704	77
2003	69.56	11.9%	302	67	**2015**	277.73	6.7%	791	81
2004	116.44	67.4%	472	65	**2016**	236.46	-14.9%	770	75
2005	140.30	20.5%	513	67	**2017**	229.64	-2.9%	791	80
2006	180.61	28.7%	541	62	**2018**	282.68	23.1%	871	86

Source: author's calculation according to the PFI League Tables.

[44] URL://http://www.pfie.com/ - Thomson Reuters Project Finance International

An analysis of the dynamics of the volume of project finance transactions in the global market allows us to state that in recent years. The use of project finance has grown dramatically over the years from $23.33 bn per annum in 1995 to reach a peak of $282.7 bn in 2018, financing around 11000 transactions in 158 different countries, with a total amount of project finance raised between 1995 and 2018 amounting to $3771 bn. The USA has $578.7 bn for most project finance (followed by Australia $370.2 bn and the UK $313.3 bn).

Project finance market before the financial crisis from 2000 to 2008 can be characterized based on the following data:

- Total project finance loans amounted to $1259 bn;
- In total, 4325 loans were granted to project finance projects;
- The average annual growth rate of financing was 19.2%.

Using this type of financing had been a clear trend of growth until 2008, when this sector of the international financial market reached $250.6 bn. However, in 2009 the volume of project finance in the world fell back to 2005 level, decreasing by 44% compared to 2008 due to the global financial crisis, amounted to $139.2 bn, which was the lowest figure in the last 15 years as can be seen in *Fig. 2.1*.

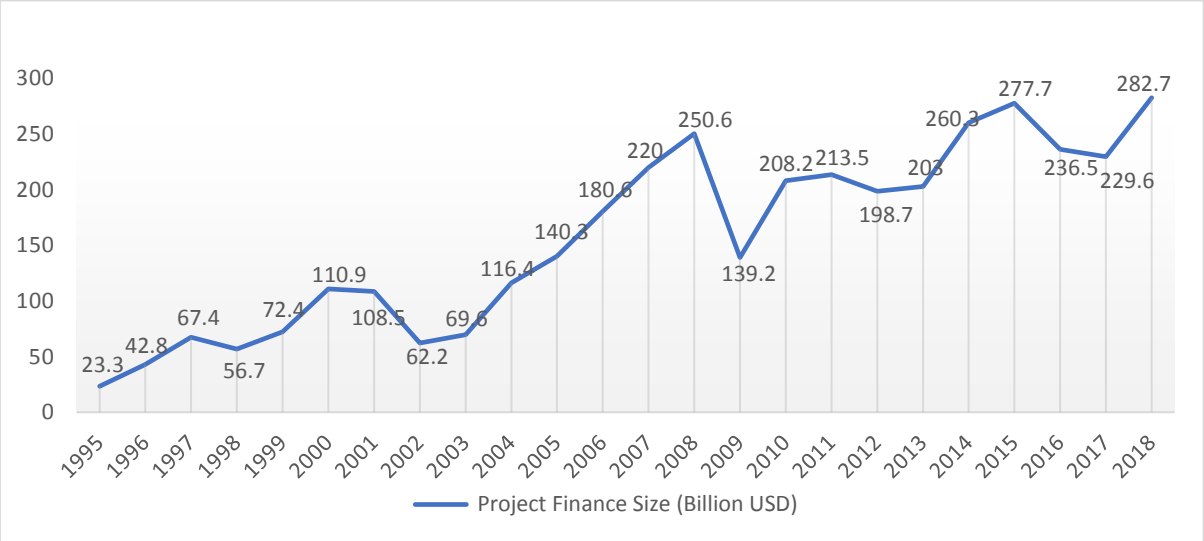

Fig. 2.1. Size of project finance transactions in the world from 1995 to 2018

Source: author's calculation according to the PFI League Tables.

Project finance market after the financial crisis from 2010 to 2018 can be characterized based on the following data:

- Total project finance loans amounted to $2210.2 bn;
- In total, 6262 loans were granted to project finance projects;

- The average annual growth rate of funding amounted to 9.7%.

This form of financing has also been used extensively in emerging economies, such as in China ($34.7 bn) and India ($274.8 bn). Since 2005, India has been among the top ten countries attracting project finance, India ranked on top in the global project finance market in 2009, 2010, and 2011, accounting for 21.5%, 26.3%, 21.05% of the global project finance market respectively, ahead of the UK, Australia, and the USA.

According to Thomson Reuters, from an industry perspective on the international project finance market, the power generation sector has been the leading sector in applying project financing since 1995. It has accumulated at least 30%, reaching a maximum of 53.5% in 2017, except 1997, where the telecommunication sector took first rank (27.6%) ahead of the energy sector (24.9%). In recent years, oil and gas, and transport sectors have shared second place with an average of 20% for both sectors between 2009 to 2018.

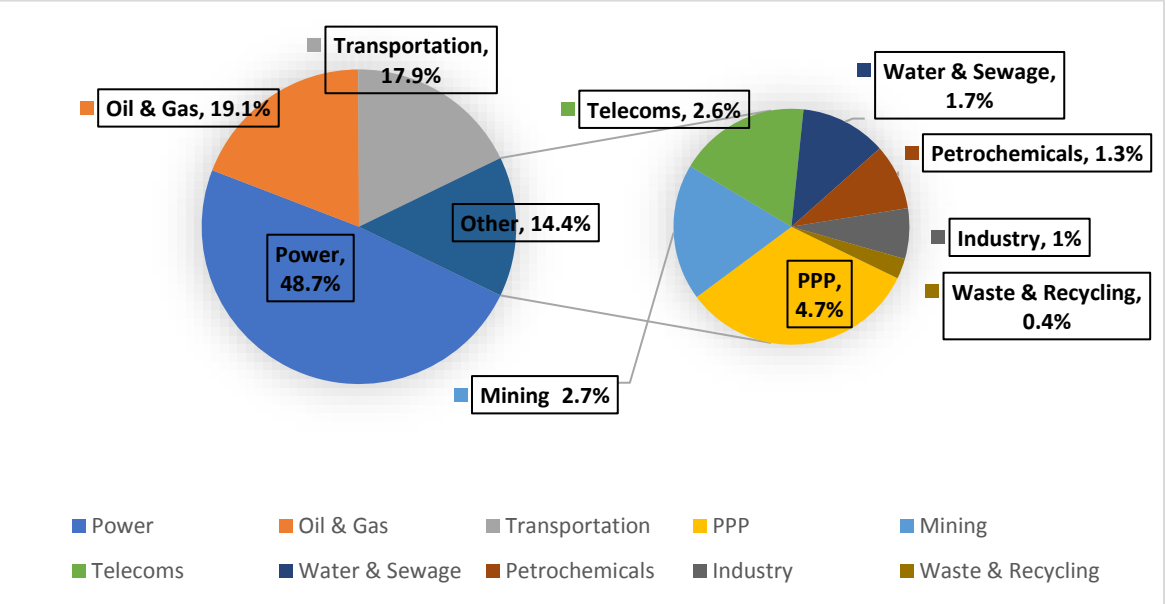

Fig. 2.2. Sectoral structure of the global market for project finance in 2018

Source: author's calculation according to the PFI League Tables.

In 2018, the main industries that used transactions involving project finance were the power generation (48.7%, $137.63 bn), oil and gas (19.1%, $54.07 bn), and transport (17.9%, $50.51 bn) as shown in *Fig. 2.2*. These fairly capital-intensive sectors form a significant part of the national infrastructure and have predictable sources of income, making them suitable for project financing.[45]

[45] Езангина И.А, Сторожилов Н.А. Усиление роли институтов развития в механизме банковского проектного финансирования. Финансы: теория и практика. 2017;21(6). P:24.

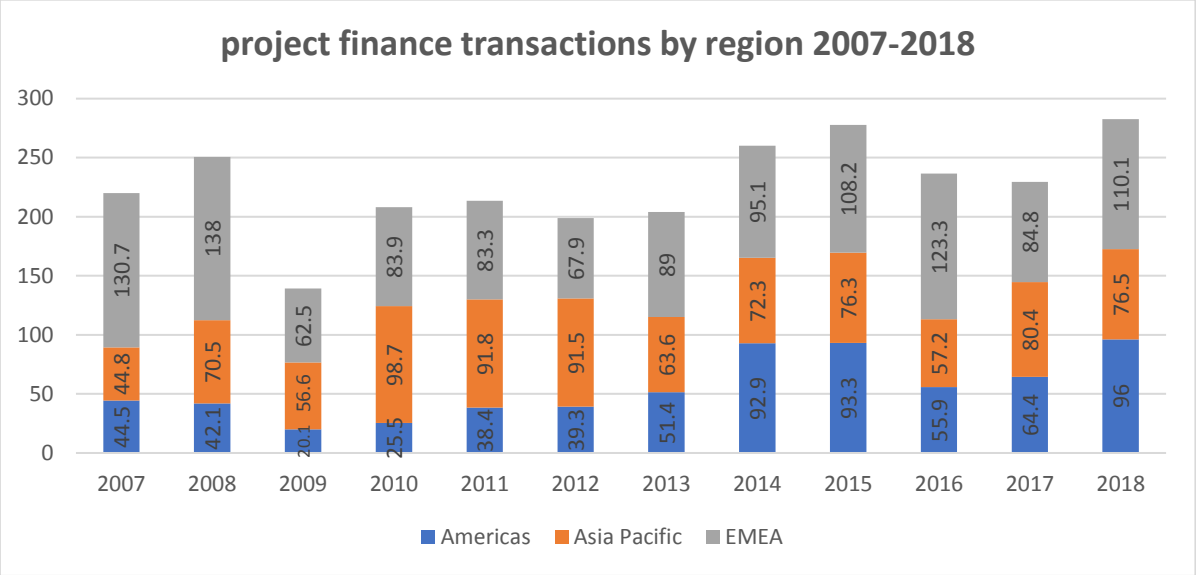

Fig. 2.3. The distribution of project finance transactions by region for the period 2007-2018
Source: author's calculation according to the PFI League Tables.

On a regional basis, the distribution of project finance transactions by region is shown in *Fig. 2.3* from 2007 through 2018. The market is divided into the Americas, EMEA (Europa, Middle East, and Africa), and the Asia Pacific. Until 2009, EMEA was the leader in the number and volume of project finance transactions followed by the Asia-Pacific region. Asian project finance activity has been driven by infrastructure finance in India, and the natural resources sector in Australia[46]. In 2011, India and Australia made up one-third of the project finance loans market. When the global financial crisis happened, a reduction in the volume of transactions in the European region, and the Asia-Pacific region took first place for the years from 2010 to 2012.

However, since 2013, the EMEA region has again dominated, with an average of 41.19% of the global market between 2013-2018. The majority of transactions are conducted in the UK, France, Turkey, and Saudi Arabia. The project finance market in the Asia-Pacific region is mainly represented by Australia, India, Japan, and Indonesia. More than 60% of the project finance transactions in the Americas region take place in the USA.

Table 2.2 shows the geographic distribution of project finance transactions for the top 15 countries in 2018. The leading position in 2018 in terms of bank loans in the project finance market is for the USA, volumes have increased by 38% compared to 2017 and amounted to $58.67 bn, this is about 21% of the total world project finance market. The volumes of project finance in Australia have increased by almost 30%, amounted to $31.83 bn. However, it still lags behind the level of 2012 when Australia reached its maximum ($43 bn). The UK and Japan's project finance markets are quite

[46] Clews R. Project finance for the international petroleum industry. Academic Press, 2016. P.61.

stable, while the volume of project financing in Brazil increased by about five times, reaching an amount of $12.33 bn distributed on 50 transactions.

Table 2.2

The volume of loans issued by the banking sector for project financing in 2017-2018

Top (2018)	Country	2017		2018	
		Total loans ($ bn)	Share among all countries, %	Total loans ($ bn)	Share among all countries, %
1	**USA**	42.506	18.52%	58.669	20.75%
2	**Australia**	24.568	10.7%	31.826	11.26%
3	**UK**	21.159	9.22%	22.441	7.94%
4	**Italy**	3.931	1.71%	16.683	5.9%
5	**Brazil**	2.092	0.91%	12.326	4.36%
6	**Japan**	8.538	3.72%	9.523	3.37%
7	**France**	5.294	2.31%	8.223	2.91%
8	**Turkey**	3.64	1.59%	8.001	2.83%
9	**Indonesia**	13.814	6.02%	7.471	2.64%
10	**India**	17.932	7.81%	7.374	2.61%
11	**Netherlands**	2.730	1.19%	7.359	2.60%
12	**Germany**	4.518	1.97%	6.279	2.22%
13	**Canada**	7.466	3.25%	5.933	2.1%
14	**Spain**	5.384	2.35%	4.943	1.75%
15	**Oman**	1.368	0.60%	4.872	1.72%

Source: author's calculation according to the PFI League Tables.

The accumulated volume of project finance transactions since 1995 in the USA is $578.72 bn followed by Australia ($370.21 bn), Uk ($313.34 bn), and India ($274.83 bn).

In terms of the major players in the market, international commercial banks have dominated the sector. The top five commercial bank providers of project finance debt in 2018 are listed in *Table 2.3*.

Table 2.3

Top commercial bank providers of project finance debt in 2018

	Loans ($ bn)	No of deals	Market Share
MUFG (Japan)	18.07	148	6.4%
SMBC (Japan)	12.39	127	4.4%
Santander (Spain)	10.26	131	3.6%
Credit Agricole (France)	9.32	96	3.3%
ING (Netherlands)	9.16	94	3.2%

Source: author's calculation according to the PFI League Tables.

Additionally, at this historical stage, applying the project financing mechanism is used as one of the sources of economic growth. We have proved this fact by using regression analysis.

By comparing the data on the volume of world GDP in *Table 2.4*, and the data on the size of project finance from *Table 2.4* between 2001 to 2018, arranging them in order of increasing factor x (the volume of project financing), it is possible to establish direct relationships between the studied characteristics. Such a study will establish a relationship between the growth of project finance and the world GDP.

Table 2.4

World's GDP between 2000 and 2018 ($ bn)

Year	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Size of world GDP	33397	34675	38904	43818	47458	51448	57968	63616	60344
Year	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Size of world GDP	66049	73391	75083	77236	79334	75052	76166	80963	85931

Source: compiled by the author based on World Bank data.[47]

It can be assumed that the relationship between global GDP and project finance is direct, which can be described by the equation of the line. To establish the parameters of the linear regression equation y = a + b * x, we used the built-in statistical function (Linear), which allowed us to establish the value of coefficient b, coefficient a, determination coefficient R^2.

As a result of our calculations, we obtained the following regression equation, which reflects the relationship between global GDP and project finance:

$$Y = 209 * X + 23508$$

R^2 is 0.78, which is fairly good. It means that 78% of our values fit the regression analysis model.

The experience of applying project financing in the Russian economy is rather small compared to foreign practice; the total amount of project finance has reached $73 bn in Russia between 1995 and 2018.

The 2008 crisis has negatively affected the Russian project finance market, as reflected in *Fig. 2.4*, the volume of transactions in 2009 and 2010 had decreased by 69% and amounted to $2.75 bn at

[47] URL://https://data.worldbank.org/indicator/NY.GDP.MKTP.CD - The World Bank

the end of 2010. However, in 2011, the volume of project finance in Russia had quadrupled and amounted to $11.3 bn. In the period 2012-2015, transactions decreased by 95% and amounted to $0.61 bn at the end of 2015. Such a significant reduction in the volume of project finance transactions is caused by the limited access to foreign sources of financing in connection with western sanctions on the Russian economy. In 2016, the maximum volume of project finance in Russia was noted, and amounted to $19.08 bn which exceeds the volume of transactions in 2015 by 18 times, accounting for 8.1% of the global project finance market and ranked as the third on the international project finance market according to 2015 data after USA and Australia, this increase in the volume of transactions is associated with the investment in the oil and gas sector (Yamal LNG). In 2018 the transactions' volume dropped to $1.9 bn because Yamal LNG (Liquefied Natural Gas) scheme was financed in 2016 and not repeated, also because of the continuing sanctions on Russia following the Ukrainian crisis in 2014.

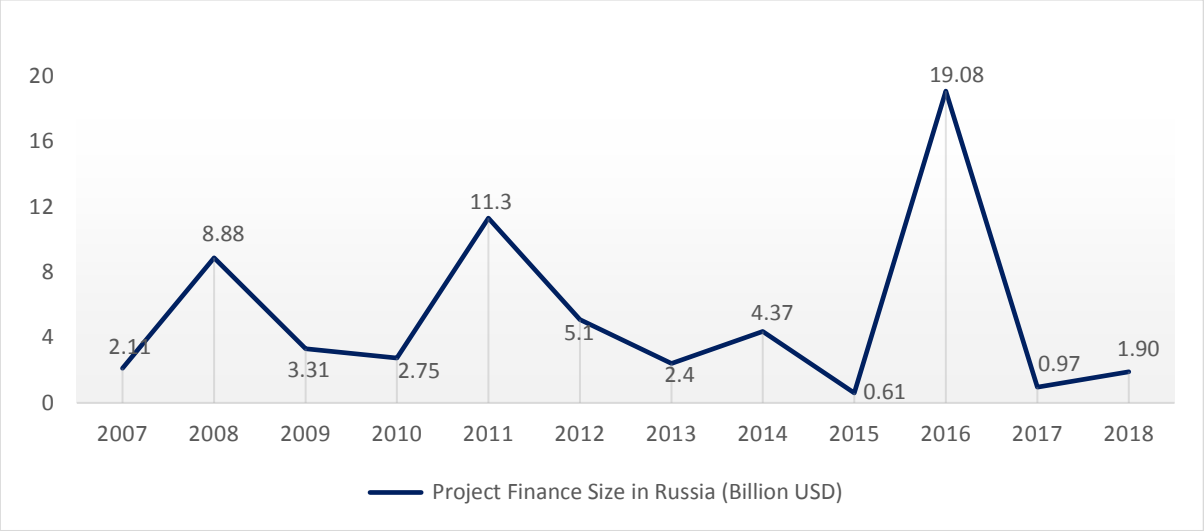

Fig. 2.4. Size of project finance transactions in Russia from 2007 to 2018

Source: author's calculation according to the PFI League Tables.

2.2 The growth of project finance in the Arab world

Arab countries are not the most developed markets in terms of considering examples of project financing compared to European countries or the USA. However, the Gulf countries stand apart, they have become a popular investment destination, given their extensive energy resources and a rapidly growing population. There is still a huge need for infrastructure (including energy, water, and sewerage treatment) throughout the region.

Table 2.5 illustrates the evolution of transactions' volume carried out in all Arab countries from 1995 to 2018 and their share in the global market.

Table 2.5

The annual volume and number of project finance transactions in the Arab world from 1995 to 2018

Year	Total loans ($ bn)	Total number of transactions	Share among all countries, %	Year	Total loans ($ bn)	Total number of transactions	Share among all countries, %
1995	0.10	1	0.43%	**2008**	25.72	28	10.27%
1996	4.92	7	11.48%	**2009**	11.92	15	8.56%
1997	7.07	8	10.49%	**2010**	14.62	11	7.02%
1998	3.21	10	5.66%	**2011**	10.49	12	4.91%
1999	4.40	11	6.07%	**2012**	9.13	15	4.59%
2000	3.67	8	3.31%	**2013**	16.73	13	8.24%
2001	8.60	16	7.93%	**2014**	13.48	25	5.18%
2002	2.39	7	3.84%	**2015**	16.49	22	5.94%
2003	7.79	12	11.19%	**2016**	27.51	28	11.63%
2004	18.25	25	15.67%	**2017**	11.59	29	5.05%
2005	29.06	37	20.71%	**2018**	9.59	16	3.39%
2006	30.57	27	16.92%	**Total**	**327.07**	**423**	**8.67%**
2007	39.78	40	18.08%				

Source: author's calculation according to the PFI League Tables. (for details see appendices 1 and 2).

As can be seen in *Table 2.5*, the project finance market boomed in 1996 and rose from virtually nothing to about $5 bn with 11.5% of the global market. The market stayed stable with less than 10% of the global market share until 2004 when the project finance loan market increased by 134% compared to 2003 and jumped to $18.25 bn, which was 15.7% of the global market. The volume of transactions continued growing in Arab countries until 2008. The 2008–2009 financial crisis had a sizeable impact on energy prices and, by association, on the development of energy and non-energy infrastructure where volumes decreased dramatically from about $40 bn in 2007 to just below $26 bn in 2008, a similar fall occurred in 2009 when the loan volumes dropped to about $12 bn. Transactions' volume fluctuated significantly in the last decade, dropping off to $9.13 bn in 2012 and peaking at $27.51 bn in 2016.

Table 2.6 lists the total volume of project finance for each Arab country by itself from 1995 to 2018. Project financing is booming in Saudi Arabia, leading Arab countries in transactions. About 32% of the projects took place in the Kingdom of Saudi Arabia, the largest economy in the region, with a total of 85 transactions worth more than $104 bn, followed by Qatar (17%), the United Arab

Emirates (16%) and Oman (12.5%). Together, the Gulf Co-operation Council (GCC)[48] account for 86% of the total Arab project finance market.

Table 2.6

The total volume of project finance in each Arab country from 1995 to 2018 ($ bn)

Country	Total loans	Total number of transactions	Country	Total loans	Total number of transactions
Saudi Arabia	104.45	85	**Algeria**	2.16	7
Qatar	56.59	52	**Tunisia**	1.103	4
UAE	51.84	68	**Syria**	0.3	1
Oman	40.59	69	**Lebanon**	0.1	1
Egypt	24.65	51	**Libya**	0.1	2
Kuwait	14.95	13	**Palestine**	0.098	2
Bahrain	12.75	18	**Sudan**	0.025	1
Morocco	8.95	13	**Djibouti**	0.04	1
Jordan	5.58	34	**Total**	**327.07**	**423**
Yemen	2.78	1			

Source: author's calculation according to the PFI League Tables. (for details see appendices 1 and 2).

Fig. 2.5 shows the transactions' volume in the last 16 years for the Gulf Cooperation Council (GCC) region. The Gulf Cooperation Council (GCC) region comprises fast-growing economies with government revenues fuelled by considerable oil revenues. Investment in energy infrastructures is a crucial pillar of the GCC governments policy strategies for regional economic development. Furthermore, GCC economies usually have specific tax legislations that can influence on the capital structure of large investment projects. Except for Oman, GCC countries did not historically levy a sizable corporate tax on locally owned domestic companies.[49]

The project finance market of the Gulf Co-operation Council (GCC) reached its highest levels in 2005-2007 and recorded its maximum in 2007 with $34.7 bn as a result of high oil prices. However, since 2008, due to the global financial crisis, the European fiscal crisis, and political and economic instabilities following the Arab Spring have led to a sharp reduction in the GCC project finance market. The governments throughout the region are investing in power generation, petrochemical, oil

[48] The Gulf Cooperation Council is a regional intergovernmental political and economic union consisting of all Arab states of the Persian Gulf, namely: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

[49] Atalla T., D'Errico M.C. Energy project financing in the GCC region: an empirical investigation. Energy Transitions. 2019. P.1.

and gas, transport, and other industries, as they face a growing population and the need to diversify economic activities.

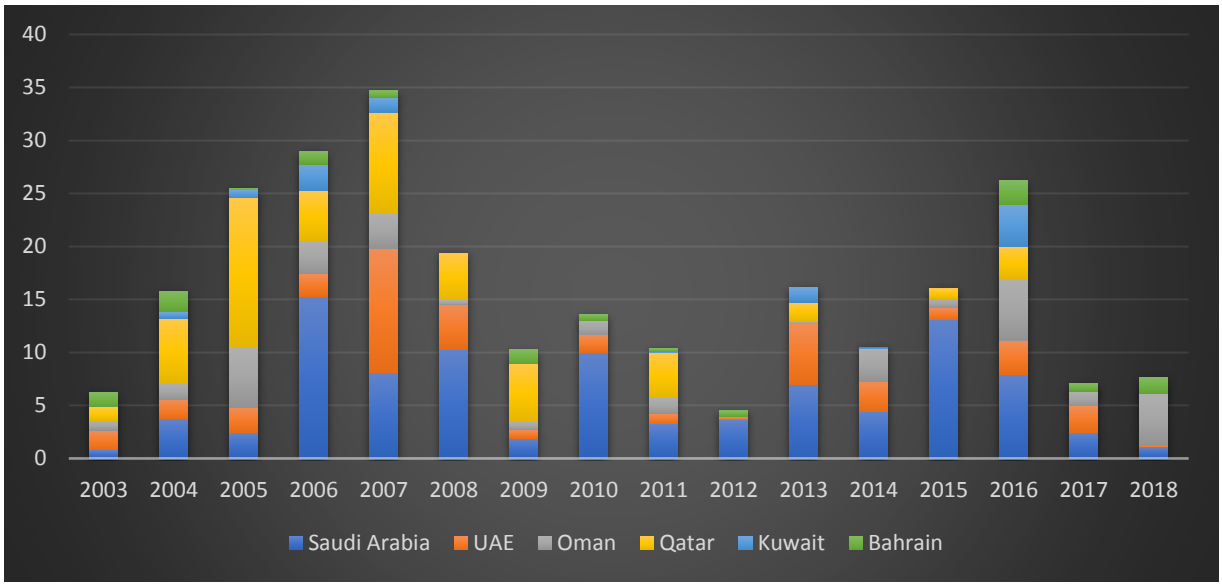

Fig. 2.5. Project finance volumes in the GCC region since 2003 ($ bn)

Source: author's calculation according to the PFI League Tables.

The data in *Table 2.7* indicates that 224 projects occurred in the GCC region for the period 1995-2018, representing a total value of $281 bn and distributed between 10 industrial sectors including utilities (power generation, water desalination, and sewage treatment), oil and gas production, petrochemicals, mining, transportation, and other industrial sectors.

The Gulf has been a particularly prolific source of project finance opportunities in both refining and petrochemicals, because of the cheap and abundant raw material. Over the past few decades in Saudi Arabia, the industrial cities of Jubail and Yanbu have developed into large manufacturing sites for petrochemicals and refined products. The investments made into the downstream oil and gas sector in these cities has been enormous, most of it has been funded through project finance loans. Qatar, Oman, and Kuwait have, likewise, raised project finance for refining and petrochemical projects.[50]

Project finance in Qatar was primarily used in the oil and gas, power, and social infrastructure sectors. In 2012, Qatar's national gas companies (Qatargas and Rasgas) became the world's largest producer of LNG.[51] Qatargas operates 14 LNG trains with a total annual production capacity of 77 million tonnes. The LNG industry in Qatar has been financed almost by using project finance, project finance debt of about $14 bn has been successfully raised from a variety of sources for Qatargas and

[50] Clews R. Ibid.

[51] Elbashir N.O., El-Halwagi M.M., Economou I.G., Hall, K.R. Natural Gas Processing from Midstream to Downstream. John Wiley & Sons. 2019. P.9.

Rasgas. Moreover, hosting international events, such as the FIFA 2022 World Cup, increases the demand for infrastructure and facilities.

Table 2.7

Number of projects by industry and country between 1995 to 2018

(Size in $ bn / number of financed projects)

Sector	Saudi Arabia	Qatar	UAE	Oman	Kuwait	Bahrain	Total size and # of Projects
Utilities (Power & Water)	21082 / 16	8376 / 7	26995 / 23	8797 / 20	2196 / 3	5244 / 6	**72689 / 75**
Oil & Gas	14430 / 6	25342 / 11	3411 / 8	20161 / 17	4212 / 2	1591 / 2	**69147 / 46**
Petrochemicals	47956 / 27	6222 / 6	80 / 1	6948 / 5	7797 / 2	124 / 1	**69126 / 42**
Mining	15138 / 6	3309 / 2	14580 / 5	1545 / 1	-	5793 / 4	**40365 / 18**
Transportation & Infrastructure	2615 / 6	11346 / 7	425 / 1	1033 / 5	-	-	**15418 / 19**
Telecoms	2350 / 1	-	1800 / 2	220 / 1	750 / 1	-	**5120 / 5**
Leisure & Property	300 / 1	-	3187 / 4	105 / 1	-	-	**3592 / 6**
Agriculture & Forestry	280 / 1	2000 / 1	487 / 3	1782 / 2	-	-	**2549 / 7**
Industry	301 / 2	-	709 / 3	-	-	-	**1010 / 5**
Waste & Recycling	-	-	163 / 1	-	-	-	**163 / 1**
Total	**104451 / 66**	**56593 / 34**	**51837 / 51**	**40591 / 52**	**14955 / 8**	**12752 / 13**	**281181 / 224**

Source: author's calculation according to the PFI League Tables. (for details see appendix 3).

In the United Arab Emirates (UAE), project financing has been mainly concentrated in the power and water sectors. Besides the power and water sectors, project finance has been used in heavy industries, including steel. There have also been two PPPs in the education sector: the Sorbonne University Abu Dhabi and the campus of Zayed University. Over the past few years, there has been a lot of activity in the solar energy sector. In 2018, the financing of the waste-to-energy (WTE) plant in Sharjah was completed, the first one in the region.

Project financing in Oman has emerged as the preferred alternative to conventional methods of financing infrastructure and other large-scale projects in the field of oil and gas pipelines, refineries, electricity-generating facilities, and water and desalination projects.

Islamic finance made up nearly 40% of the total project finance market in the GCC in 2015 compared to just over 12.5% in 2006.[52]

2.3 Successful Arab project finance cases

This paragraph will discuss four projects that demonstrate the application of project finance, two of them were in Saudi Arabia, one in Bahrain, and another in Oman.

Medina airport – Saudi Arabia. Saudi Arabia has a substantial comparative advantage in oil production, with an oil extraction cost of $9 per barrel, the lowest in the world. Saudi Arabia has the second-largest proven oil reserves (after Venezuela), estimated at around 267 billion barrels. It is a member of OPEC and one of the world's top twenty economies (G20).

As the largest oil-exporting country, Saudi Arabia has sought since 2016 to implement economic reforms that reduce dependence on oil as a major economic activity, and put strategies to diversify non-oil income sources within the so-called Saudi Vision 2030.

There are 27 airports in Saudi Arabia, 14 international airports (8 of them are regional), and 13 domestic airports, handling 99.86 million passengers in 2018, which increased from 54,46 million in 2011.[53] The largest four airports are listed in *Table 2.8* in addition to their traffic volumes in 2011 and 2018.

Table 2.8

Traffic handled by Saudi Arabian airports in 2011 and 2018

Airport	Air transport movements			Passengers (millions)		
	2011	2018	Change %	2011	2018	Change %
Jeddah	162,838	233,912	43.6%	22.897	35.822	56.4%
Riyadh	135,757	206,378	52.0%	14.888	27.933	87.6%
Dammam	62,060	92,654	49.3%	5.531	10.434	88.6%
Medina	32,315	65,290	102.0%	3.549	8.784	147.5%

Source: author's calculation according to GACA annual reports.

The General Authority of Civil Aviation of Saudi Arabia (GACA) is the statutory authority charged with civil aviation. As well as owning airports, it is also responsible for air traffic regulation. In 2007, at the behest of the Government, GACA undertook an initial phase of airport privatisation

[52] Islamic financial policy. In: Dar H., Azmi S., Bushra Shafique B., eds. Global Islamic financial report 2016. P.259.
[53] General Authority of Civil Aviation. Annual reports 2011-2018. (In Arabic)

using various public-private partnership models, deploying a mix of relatively short-term limited scope management contracts and more extensive project finance/BTO transactions.[54]

Madinah in Saudi Arabia, is the second most important Islamic destination after Mecca. The Prince Mohammed Bin Abdul-Aziz International Airport, which serves the Madinah region, was working with its maximum capacity of 3.5 million passengers per year in 2011 and has not been able to adequately cater to the growing numbers of passengers due to inadequate infrastructure.

Medina is the destination of Muslims in the Umrah season, extending throughout the year and reaching its peak in the month of Ramadan. Before it was transformed into an international airport in 2012, Medina Airport had been facilitating the access of pilgrims to the Holy City either through domestic services or through a limited volume of international flights scheduled during the Hajj season. The airport is a vital asset to the local economy, which depends heavily on inbound religious tourism.[55]

In August 2011 the Turkish airport operator TAV led the Tibah consortium (TAV Holdings of Turkey, Al Rajhi Holding Group and Saudi Oger, both from Saudi Arabia), was awarded the contract to build and operate the airport and then transferring it to the GACA after 25 years (the period of the concession agreement).[56] Under the terms of the BTO contract, Tibah was committed to building and expanding a new terminal facility and other facilities within three years; it should also give 54.5% of the annual turnover of the airport operations to GACA as a concession fee. This concession will be reduced to 27.25% for the first two years that follow completion of the construction of the new terminal in Q2 2015. The project was designed in two phases, to increase capacity from 4-5 to 8 million passengers a year when the first phase was completed in 2015, with the potential for further expansion to 16-18 million by 2037.

International Finance Corporation IFC was the lead adviser to GACA and recommended a build-transfer-operate (BTO) structure in a 25-year concession. This structure would keep ownership of assets in government hands, as required by GACA, ensuring that private sector partners would contribute funding and expertise for a world-class international airport. It was officially commenced in June 2012, and the airport handover was completed. The lenders were Saudi British Bank (SABB),

[54] Chaouk M., Pagliari R., Miyoshi C. A critical review of airport privatisation in the Kingdom of Saudi Arabia: Case study of Medina Airport. Case Studies on Transport Policy. 2019. P.434.
[55] Chaouk M, Pagliari R, Miyoshi C. Ibid. P.435.
[56] Baghdadi A., Kishk M. Saudi Arabian aviation construction projects: Identification of risks and their consequences. Procedia Engineering. 2015. P:33

Arab National Bank (ANB), National commercial bank (NCB), and Sumitomo Mitsui Banking Corp, invested $296 m, $316 m, $296 m, and $296 m respectively.

The $1.2 bn expansion of Medina Airport in Saudi Arabia was the first full airport PPP in the GCC region and fully funded by Islamic compliant finance, using an Istisna'a contract during the construction stage, under which the SPV transferred certain rights in the BTO agreement to the financiers. As the SPV did not own the project assets, a leasing (Ijara) structure based on the ownership of project assets, as typically used in a BOT project, could not be used. Therefore, an innovative structure combining the Istisna'a structure during the construction phase and assignment of commercial rights during the operations phase was successfully employed. The project finance structure of the project is summarised in *Fig. 2.6*.

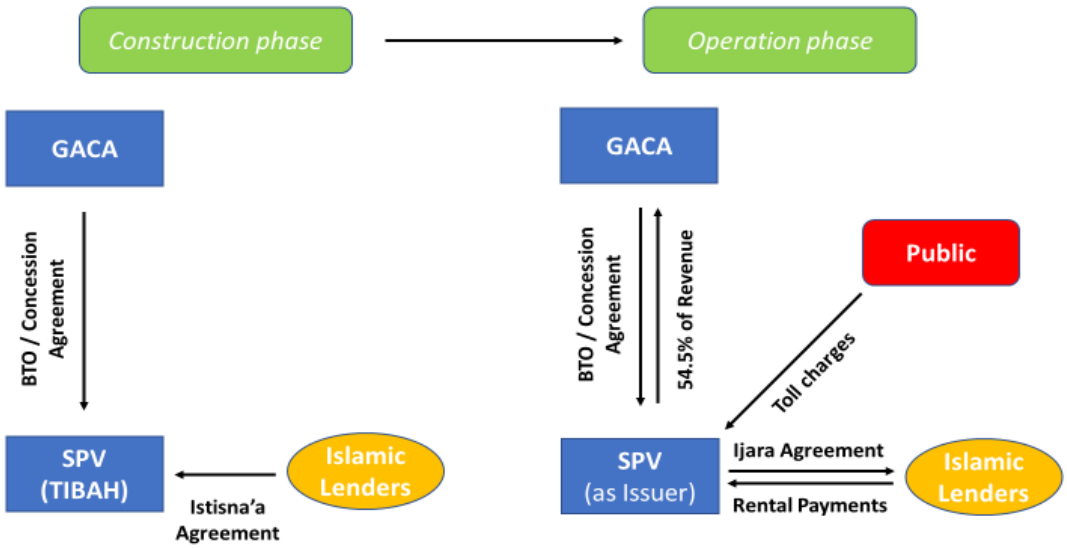

Fig. 2.6. Madinah PPP airport project Islamic finance structure

Source: compiled by the author based on World Bank.[57]

The monthly lease payments during the operation stage are calculated based on the total cost of the fund plus the profit. Under the Ijara contract, the Islamic lenders will be provided with fixed income.

During the time of its development, there was uncertainty for the future volumes of passengers that would use the airport. In the end, Medina airport ended up becoming a successful project, opening doors for plans on PPP projects in the country.[58] Thomson Reuters has named Medina project as the

[57] Aijaz A., Abayomi A. Mobilizing Islamic finance for infrastructure public-private partnerships. World Bank Group. Washington D.C., USA, 2017. P.49.
[58] Abdul-Latheef A.V. Critical success factors for public and private project partnership in Saudi Arabia. P.19.

Middle East and Africa Infrastructure Deal of the Year in 2013,[59] and Best Islamic Finance Project (2013) by Euromoney Islamic Finance Awards.

Tibah forecasted a drop in the volumes of traffic and passengers until the end of 2012, due to the restrictions for facilitating the construction work. However, Passenger traffic volumes exceeded expectations.

Before the deal, the average growth rate of Passenger volumes was 12% per year. However, following the project, the rate increased to an average of 14%, reaching 8.76 million passengers by 2018, as shown in *Fig. 2.7*.

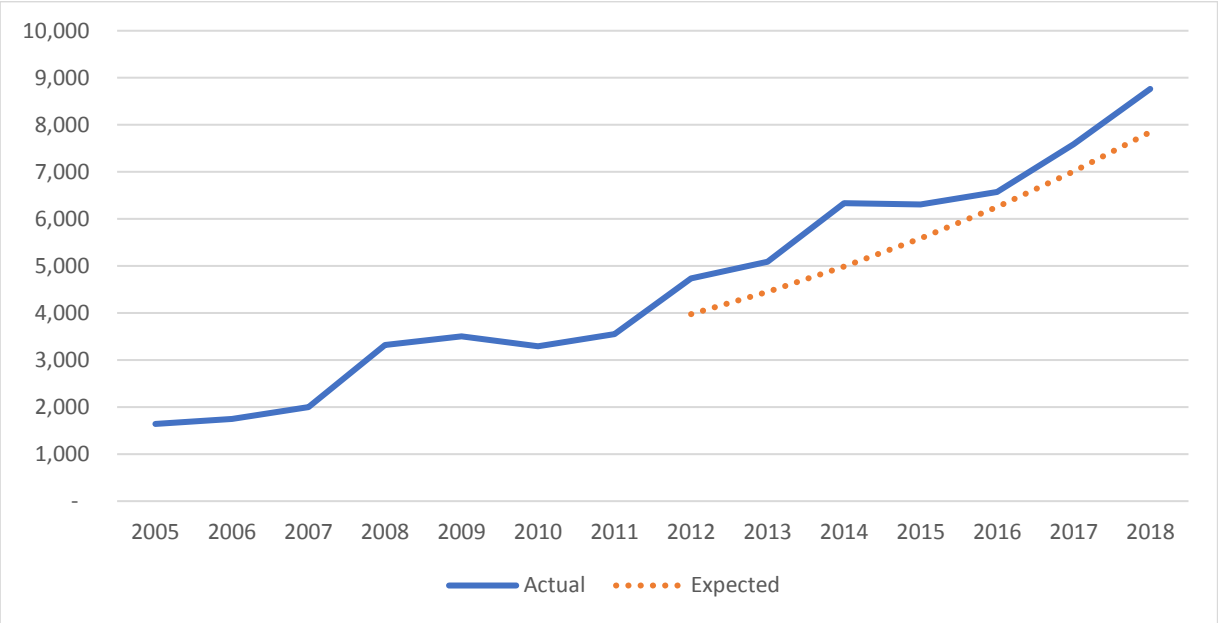

Fig. 2.7. Medina Airport's actual and expected traffic movements between 2005 to 2018

Source: author's calculation according to GACA annual reports and TAV Airports annual reports.

Sohar Aluminum – Oman. Sohar Aluminum smelter project in Oman was the first greenfield aluminum smelter to be built in Oman. Sohar Aluminum was formed in September 2004, the deal was closed in 2005, and the plant started production in 2008 reaching full capacity in 2009.

The project sponsors were Oman Oil Company (40%), Abu Dhabi National Energy Company PJSC – TAQA (40%), and Rio Tinto Alcan (20%). The project had been very successful in attracting the necessary financing; it only took eight months to get the full financial close. The financing plan involved $1.545 bn in debt, $1.2 bn of which was commercial debt,[60] $85 m letters of credit facility, and $260 m of it was financed through an Islamic financing tranche. The Islamic financing tranche

[59] URL://http://www.pfie.com/special-reports/yearbooks/yearbook-2013/
[60] Alexander A.J. Ibid. P.604.

at that time was the first Islamic financing tranche in multi-sourced project financing in Oman, which used an Istisna'a - Ijara financing structure.

The Istisna'a - Ijara structure was formulated with an Istisna'a agreement (a sale of assets to be constructed), a forward Ijara agreement (an Islamic lease), sale and purchase undertakings, a service agency agreement, an investment agency agreement, and a common terms agreement.[61]

Regarding the Istisna'a agreement, it was operated during the construction phase of the project. Sohar Aluminum Project Company commissioned the construction of the Islamic-financed assets on behalf of the Islamic lenders. When the assets were complete, they were delivered to Sohar Aluminum Project Company, but the title to the assets passed to the Islamic lenders.

Sohar Alu-minum Project Company entered into an Ijara agreement with the Islamic lenders for the project's operational phase. Under the Ijara lease agreement, Sohar Aluminum Project Company leased the financed assets from the Islamic lenders and made lease payments that were near equivalent to the principal and interest payments made under the commercial bank tranche.[62]

The Istisna'a - Ijara structure highlights the importance of title retention for Sharia compliance. In sum, the Islamic lenders financed the purchase of some of the project assets for Sohar Aluminum Project Company under the Istisna'a agreement and received title to those assets. The Islamic lenders then received payment on this financing via the Ijara agreement. Upon completion of the lease term, they would return the title to the assets to Sohar Aluminum Project Company.

Sadara Petrochemical - Saudi Arabia. Sadara was established in 2011; it is a $20 bn joint venture between Saudi Aramco (national oil company in Saudi Arabia) and Dow Chemicals. Under this joint venture, 26 manufacturing units with a production capacity of over 3 million tons are being constructed in Jubail city. Once completed, this facility would be the world's largest integrated chemical complex ever built in a single phase. The complex will be adjacent to a new industrial park where downstream manufacturers will be situated aiding clustering efforts. 14 of the 26 manufacturing facilities will bring new technology to the Saudi chemical cluster, while the complex will be the first to crack naphtha throughout the GCC. The complex was expected to achieve full operational status in 2016.[63]

[61] Sengupta V. Ibid. P.16.
[62] Alexander A.J. Ibid. P.605.
[63] Aloadah Y., ElKhoury G., Bashir F. Upgrading the Saudi chemical cluster. P.25.

The deal was the largest project financing in the Middle East and was set to be the largest project finance deal in the world in 2013. Leading to the construction of the largest single-phase integrated chemical facility ever built.

Al Dur (IWPP) – Bahrain. Electricity infrastructure nowadays is becoming a central component of the economy for many reasons. Firstly, as Bahrain is the center of finance in the Gulf Cooperation Council (GCC) region, electricity is an essential factor for the effectiveness of the banking and financial sector. Secondly, Bahrain is moving toward an industrial-based economy to diversify its economy and to shrink its dependency on oil; thus, electricity is becoming an essential factor for achieving this goal.

Bahrain kingdom supported independent projects (IPPs) and engaged in the privatization process of some state-owned power sector assets. Al Dur plant is an example; it was planned to operate in two phases.[64]

In 2009, the contract to build 218 000 m3/day water desalination and 1234 MW power project in Bahrain was won by a consortium comprising GDF Suez of France and Gulf Investment Corporation of Kuwait. The cost of the construction project was estimated at $2.1 bn. The first unit was expected to begin in July 2010 and achieve full operation capacity by July 2011. The project funding was from debt and equity in the ratio of 75:25 with the Power and Water Project Agreement (PWPA) tenure of 25 years. The $1.7 bn debt for the project was achieved from multiple sources, which include: Islamic financing, export credit agencies, and commercial financing.

This was the first Independent Water & Power Project transaction with multiple Islamic tranches, the Islamic financing worth $300 million.[65] The financial deal for the project was achieved and successfully closed in July 2009 within an adverse market condition. Since long-term liquidity was not available, the project was only able to settle for 8-year tenure as it was faced with initial funding difficulties due to the crisis, closed using hard mini-perm financing totaling $1.7 bn.[66]

[64] Hamdi H., Sbia R. Short-run and Long-run causality between electricity consumption and economic growth in a small open economy. 2013. P.5.
[65] Adelekan S., Wamuziri S., Binsardi B. Evaluation of Islamic financing products for housing and infrastructure development. Procs of 29th Annual ARCOM Conference, 2-4 September 2013. P.197.
[66] Negasi M.I. Financing Higher Education in the Islamic World Through Waqf (Endowment). European Journal of Multidisciplinary Studies. 2017. p.7.

Summary

The second chapter consists of three paragraphs: the development of project finance in the world, the growth of project finance in the Arab world, and successful Arab project finance cases.

In light of the above analysis, the world market reflects wide variations in the field of project finance. This chapter sheds light on the Arabic experience in the project finance market; this mechanism has been used in 18 Arab countries, the member states of the Gulf Cooperation Council (GCC), given its extensive energy resources, were actively engaged in project finance transactions, enhancing their role in the global economy. The transactions have primarily been used in three areas: energy and water supply, petrochemicals, and the oil and gas industry. Moreover, it can be noticed that project finance in the GCC region is witnessing a growing trend of using Islamic project finance structure.

This last paragraph examined four Arab experiences in using project finance in four different industries, which are: Medina airport, Sadara Petrochemical in Saudi Arabia, Sohar Aluminium in Oman, and Al Dur (IWPP) – Bahrain. The expansion of Medina Airport was the first full airport PPP in the GCC region and fully funded by Islamic compliant finance, through Ijara and Istisna'a agreements. The Sohar Aluminium smelter project in Oman was the first greenfield aluminium smelter to be built in Oman, its financing plan involved 78% of commercial debt and 17% of Islamic financing tranche which used as an Istisna'a - Ijara financing structure. Al Dur (IWPP) project funding was from debt and equity in the ratio of 75:25, and it was the first Independent Water & Power Project transaction with multiple Islamic tranches, the Islamic financing worth $300 million (15% of the deal).

CHAPTER 3. THE PROJECT FINANCE POSSIBLE ROLE IN THE RECONSTRUCTION OF SYRIA

3.1 Syria economy before and after the crisis

The geographical position of Syria is strategically important; it is located in the oil-rich Middle East. After Syria gained its political independence in 1946, measures were taken in the country to eliminate the consequences of colonialism, and the development of the national economy began. Under the pressure of the masses, in the early 1950s, many railways and foreign companies producing electricity were nationalized, and the share of foreign capital in local companies was limited to 50%.[67] In 1961 all banks, insurance companies, industrial plants, and public utilities were fully nationalized,[68] a large part of the economy under government control. The economy was almost closed and characterized by its continued and heavy reliance on the oil sector; the share of non-oil trade in GDP amounted to about 30 per cent for the period 1974–2000.[69]

Since the early 2000s, the Syrian economy has transformed from a state-oriented economy into a liberal and competitive economy. There were some attempts to integrate the Syrian economy into the global economy; these attempts included liberalization and policies encouraging greater competitiveness.[70]

Despite these economic reforms, which included licensing private banks in 2004, policies for reducing borrowing interest, and reopening the Damascus Stock Exchange (DSE) in 2009 after more than 40 years of closure. The Syrian economy remains highly controlled by the government, with declining oil production and exports, weak investment, high unemployment levels, and economic sanctions.[71]

This paragraph outlines how Syria's economy has been affected by the crisis; It has cost the national economy enormous losses that are difficult to estimate, due to the absence of official economic figures and statistics, either because they were not published, or because of the difficulty of collecting the data necessary to estimate them.

---

[67] Карпов А.С., Карпова К.В. Современное состояние экономики Сирийской Арабской Республики. Вестник Московского гуманитарно-экономического института. 2018; 3:39. P.25.
[68] Karol R.S. The Separatist Period in Syria, 1961-1963. Asian and African Studies, 2009.75(2). P.147.
[69] Lim J.J., Saborowski C. Export diversification in a transitioning economy: the case of Syria. The World Bank, 2011. P.5.
[70] Çakmak C., Ustaoglu M. Post-conflict Syrian state and nation building: Economic and political development. Springer, 2015. P.44.
[71] Raphaeli N. Syria's fragile economy. Middle East Review of International Affairs. 2007 Jun;11(2):34-51. P.48.

As the crisis negatively affected the gross domestic product, the state budget, and other economic indicators. The economy turned to what is known as the war economy; it became a priority to secure necessary materials such as fuel, food, and medicines, with a decline in the activity of many productive sectors.

We will review the effects of the crisis on the country on the economic level and its overall indicators: GDP, inflation, government budget, deficit, and the exchange rate of the Syrian pound.

The gross domestic product (GDP) is one of the nation's main indicators; it is used to measure the country's economic growth. Syria has achieved during the period from 2001 to 2010 high economic growth rates up to 5.17% per annum on average. Compared with the Arab region, the growth performance in Syria was slightly higher than the average rate, but the per capita GDP was still relatively low.[72]

As a result of the crisis, the national economy was subjected to systematic infrastructure destruction; most of the oil and gas fields were stolen and sabotaged by armed groups. The economy was also severely affected because of the unfair economic sanctions imposed by the USA, the European Union, and some Arab countries hampering imports and exports. All these reasons have led to a large decline in GDP, where the GDP lost about 60% of its level in 2010, with annual economic growth declining from 5.19% in 2010 to about (-10%) on average during the crisis years (2011-2017), as shown in *Fig. 3.1*.

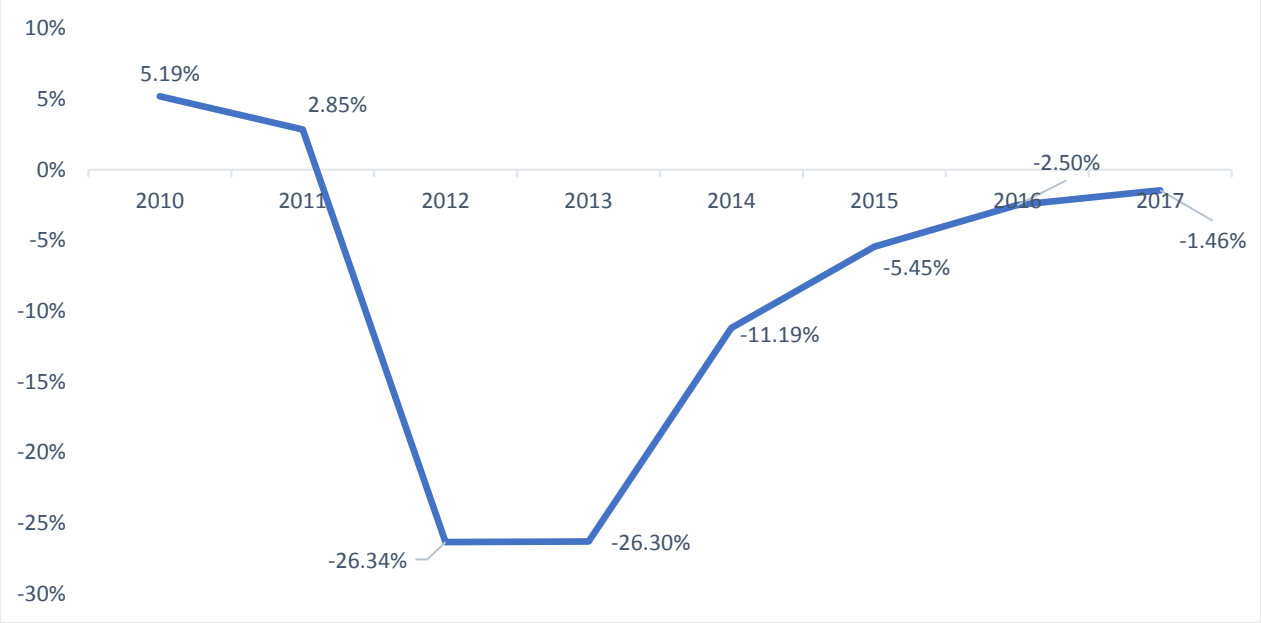

Fig. 3.1. Nominal GDP growth rates between 2010-2017

Source: author's calculation according to Central Bureau of Statistics annual reports.

[72] The Syrian crisis: roots and economic and social impacts, the Syrian Centre for Policy Research. 2013. P.16. (In Arabic).

It can be said that the Syrian economy went through three stages during the crisis, namely:[73]

- The first stage: It started from the middle of 2011 until the end of 2013, this stage is known as the shock phase of the Syrian economy. It was characterized by a near economic collapse and paralysis.
- The second stage: It was characterized by the economy's attempt to absorb the shock, during the year 2014, and the pursuit of partial revival, as the economy tries to adapt to the crisis and switch to the war economy, striving to bypass the international sanctions.
- The third stage: From the beginning of the year 2015 until now, there have been some attempts to move forward at all levels.

Assuming the GDP estimate if the crisis does not occur in Syria, and the average economic performance in 2000-2010 will continue. By comparing the estimated value of the GDP with the actual GDP, we can measure the total loss to the Syrian economy as a result of the crisis, as shown in *Fig. 3.2*. Accordingly, the accumulated loss in GDP as a result of the crisis until the end of 2017 reached SP 6562 bn (about $131.25 bn), this loss is equivalent to about 4.4 times the GDP of 2010 before the crisis.

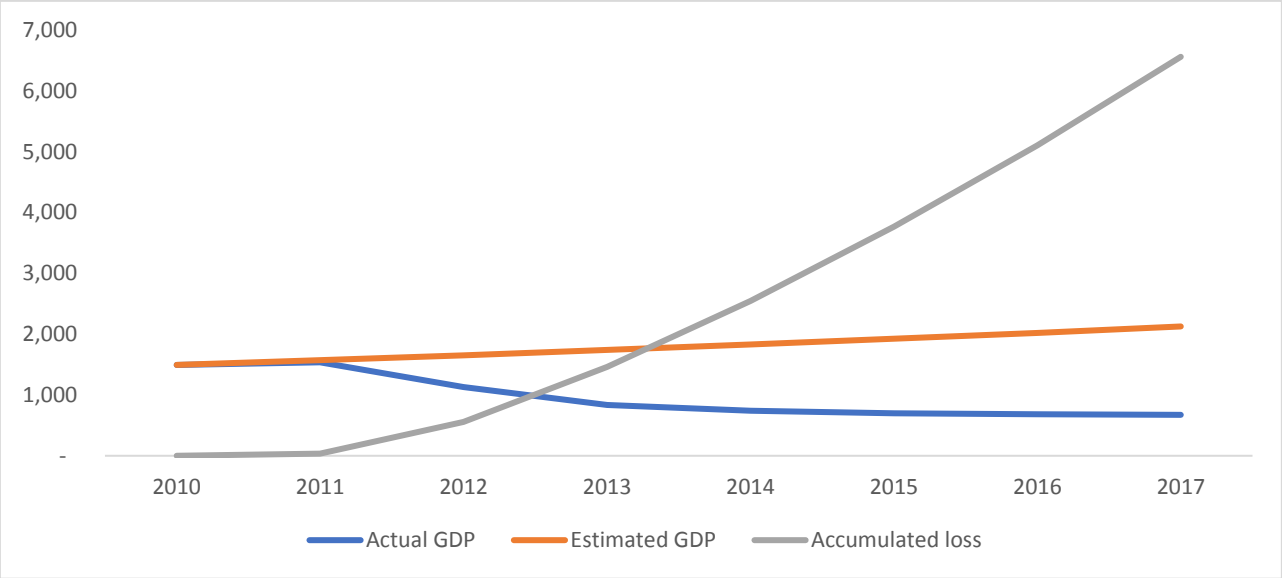

Fig. 3.2. Actual GDP, Estimated GDP without crisis, Accumulated loss in GDP (SP bn)

Source: author's calculation according to Central Bureau of Statistics annual reports.

Inflation. Syria has experienced high rates of inflation in multiple periods before the crisis. In light of an economic approach based on various theories bearing contradiction between them, given the complexity and interconnectedness of the inflation's causes, they were driven by a combination

[73] The effects of the crisis on the Syrian economy 2011-2015, Medad Centre for Studies. 2016. (In Arabic).

of factors on both the supply and the demand sides, whether in the commodity or the money market. Although inflation has acquired a monetary nature in the outcome.[74] Monetary policy of the Syrian government aimed at price stability, the average inflation rate during the period (2000-2010) was 4.9%.[75]

In the last years have witnessed successive increases in local price levels; the main reasons were:

- The deterioration of the security situation, the decline in production, and dependence on imported goods. In addition to raising the prices of oil derivatives and the increase in transportation costs. All of these factors led to higher production costs.
- The market monopoly by some traders, and their exploitation of exchange rate changes, raising the prices of several commodities by a much higher rate than the depreciation of the exchange rate.
- The increase in the public budget deficit and its financing through direct borrowing from the Central Bank. In light of the high level of public spending and the decline in public revenues, whether from taxes or because of sabotage actions in the oil sector, which was an essential resource for the state budget.[76]

The Consumer Price Index (CPI) is one of the indicators that are still regularly published (monthly) by the Syrian Central Statistical Bureau, which gives an overall picture of the evolution of prices for goods and services consumed by Syrian families. The cumulative CPI has increased by 720 per cent between March 2011 and June 2019.

Table 3.1

Annual inflation rate (2010-2018)

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Annual inflation rate %	4.39%	4.73%	33.48%	87.73%	24.94%	38.19%	47.67%	19.36%	0.92%

Source: author's calculation according to Central Bureau of Statistics annual reports.[77]

As shown in *Table 3.1*, the inflation rate was 4.75% in 2011, increasing to 33.5% in 2012. In 2013 inflation has recorded its highest level in the crisis, reaching 87.75%; between 2014-2017, the

[74] Othman S., Abbas, G., Khaddour, A. The most important determinants of inflation in Syria during the period (1990-2010). Tishreen University Journal-Economic and Legal Sciences Series. 2015:3.(2). P.286. (In Arabic).
[75] Author calculation based on data from http://cbssyr.sy/.
[76] Hassani, A.Razzaq. The evolution of the lira exchange rate and its relationship to the consumer price index during the current crisis. Damascus University Journal-Economic and Legal Sciences Series. 2015:31.(2). P.214. (In Arabic).
[77] URL://http://cbssyr.sy/ - Central Bureau of Statistics in Syria

inflation rate decreased relatively, ranging between 19% and 48%. In 2018, inflation hit its lowest level during the Syrian crisis with less than 1%; this is due to the relative security stability that occurred in that year. However, it is expected that the inflation rate rose dramatically in 2019 due to the Syrian pound value collapse.

Exchange rate. The exchange rate of the Syrian pound was relatively stable before the crisis and ranged between (47-50) against the U.S. dollar. However, during the crisis, the exchange rate of the Syrian pound was subjected to sharp declines. By January 2017, the Syrian pound had reached SP 510 per dollar on the black market, while its official rate was SP 499 (*Fig. 3.3*). Then there was relative exchange rate stability lasted about two years, for many reasons,[78] including some improvement in the business environment of some Syrian companies in some sectors in 2017, military victories by the Syrian regime forces (in Aleppo, Damascus countryside and Daraa), and Iran's credit line to Syria.

In 2019, the depreciation of the Syrian pound on the black market accelerated while the official rate remained stable, widening the gap. It is a direct reflection of the Lebanese economic crisis and the collapse of the Lebanese economy, as Syrian merchants were buying a large part of the dollar from the Lebanese market due to the tightening of economic sanctions on Syria. The exchange rate reached a new record of 911 per dollar at the end of 2019, which means that the Syrian pound lost about 95% of its value against the U.S. dollar since March 2011. This decline came as a result of a set of factors: economic (deficit in the balance of payments, deterioration of foreign reserves, the decline in domestic production, etc.), and non-economic (security and military threats to the country,[79] and economic sanctions imposed on Syria).

Fig. 3.3 shows the divergence between the official Syrian pound exchange rate issued by the Central Bank of Syria and the informal (black market) exchange rate.

Central Bank of Syria adopted an intervention policy by injecting the U.S. dollar into the market to preserve the Syrian pound value. Over the past years, the central bank has taken several steps to ease pressure on the exchange rate and stop the decline in the international reserves. Firstly, in August 2013, the use of foreign currency in business operations was banned; in 2014, exporters were forced to surrender 50 per cent of their foreign exchange earnings, then in April 2015, this rate increased to 100 per cent of their foreign exchange earnings.[80] However, since July 2016, the central bank pursued

[78] Daher J. The deep roots of the depreciation of the Syrian pound. Middle East Directions (MED), European University Institute, 2019. P.8.
[79] Alshaar j. The Impact of behavioural variables on the current crisis of the exchange of the Syrian pound, Master thesis, University of Damascus, 2018. (In Arabic).
[80] Gobat J, Kostial M.K. Syria's conflict economy. International Monetary Fund; 2016 Sep 8. P.16.

a policy of no longer intervening directly in the market to protect the value of the Syrian pound. The main reason was to preserve the remaining national foreign exchange reserves and stop speculation on the pound,[81] which has declined from $18 bn to $0.7 bn by the end of 2015.[82]

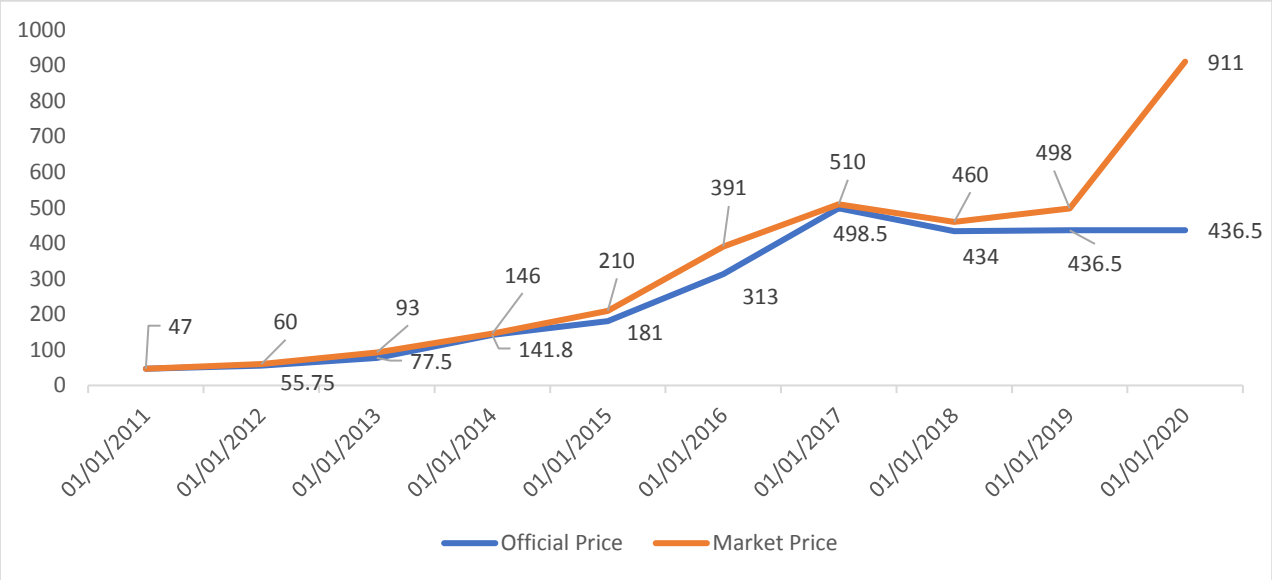

Fig. 3.3. The development of the exchange rate of the Syrian pound in the formal and informal (black) markets

Source: compiled by the author based on Central Bank of Syria.[83]

At the beginning of 2020, Legislative Decree No.3 of 2020 was issued, which tightens the penalty for non-Syrian pounds as a means of payment in Syria, to become seven years imprisonment with hard labor and a financial fine equal to twice the value of the amount used.[84]

Government budget. The government budget was also affected by the crisis in Syria, a significant decline occurred in the government revenues (oil and non-oil), as the government deficit increased, *Fig. 3.4* represents the evolution of government budget, government revenues, and deficits.

The increase in the national budget is noticed in *Fig. 3.4*, which amounted to SP 3882 bn in 2019 compared to SP 835 bn in 2011. However, in market values, the national budget of 2019 was estimated at $7.8 bn according to the exchange rate in 2019, which is about 44% of the 2011 budget ($17.75 bn). It is also evident that the budget deficit to the total budget ratio has increased during the 2012-2016 period, to reach its highest level in 2013 with 54.2%. It is in contrast to the situation before the crisis, where the deficit ratios were limited, with an average of 24% between 2004-2011. But since

[81] Daher J. Ibid. P.8.
[82] URL://https://bit.ly/2OvwfGx - World Bank, Syria's Economic Outlook – Spring 2016.
[83] URL://http://www.cb.gov.sy/ar/ - Central Bank of Syria.
[84] Legislative Decree No. /3/ for /2020/ on amending Article /2/ of Legislative Decree No. /54/ of /2013/. (In Arabic).

2016, an improvement in the deficit rate has been observed, associated with the improvement in the situation on the ground.

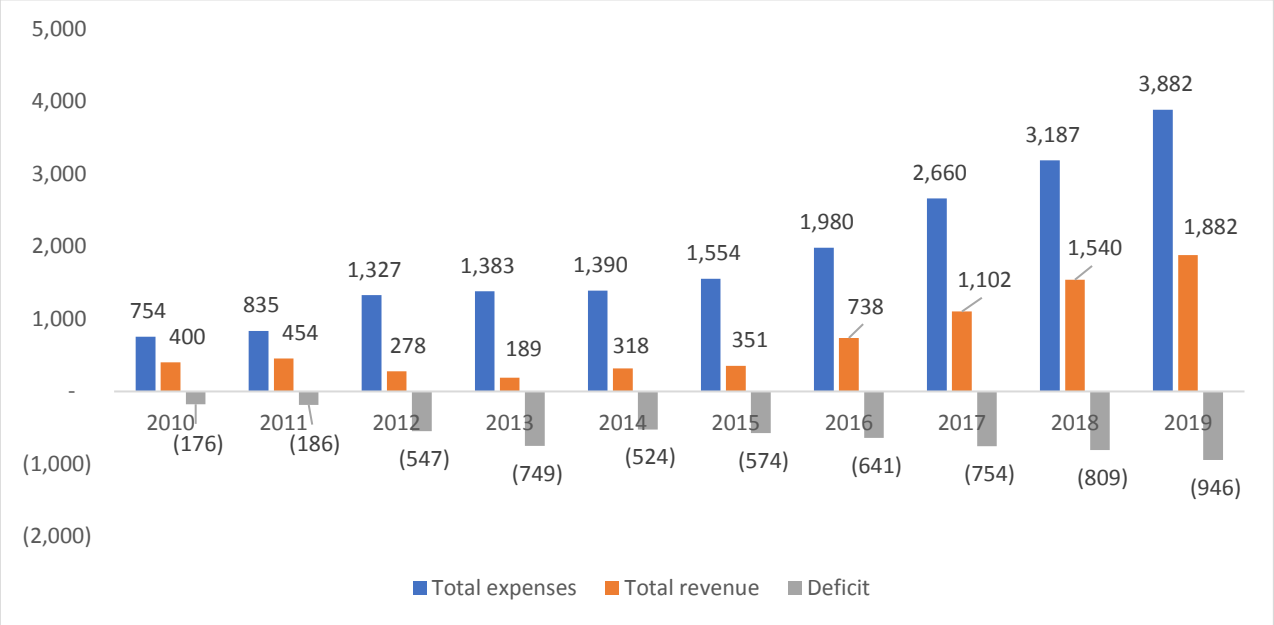

Fig. 3.4. Changes in the Government Budget during the period (2010-2019) (SP bn)

Source: author's calculation according to the Central Bank of Syria.

It is important to highlight that this deteriorating situation in the government public finances occurred as a result of increased expenditures in light of the decline in public revenues and a rise in the government support bill during the crisis years, and the difficulty of securing the resources needed in the country. What led to doubling the size of the debt of the Ministry of Finance and public sector institutions towards the monetary authority, and the financing of part of this deficit through a new money issuance contributed to deepening this problem.[85]

3.2 Possible sources of funding for reconstruction in Syria

The availability of funding is the cornerstone to start reconstruction and development of the Syrian economy; thus, the question of how to finance the reconstruction stage, and the available resources for the country to launch it arises.

Considering that some areas are still under the control of the anti-regime forces, it is not easy to provide an accurate estimate of the cost of reconstruction. President Bashar al-Assad stated that the cost of the reconstruction range from $200 bn up to $400 bn, while the ESCWA estimates the size

[85] Ismail I. Reflection of the crisis on the deficit numbers in the public budget in Syria. Tishreen University Journal-Economic and Legal Sciences Series. 2018 Nov 19;40(4). P.75. (In Arabic)

of destruction in physical capital and its sectoral distribution at more than $388 bn.[86] It is clear that the cost estimates are very high, and a third world country like Syria cannot afford this cost by itself.

Many funding sources could be an option for the reconstruction of what was destroyed by the war in Syria. These sources can be divided into two main categories: First, the internal sources, which include public resources and domestic borrowing. Second, the external sources, including Syrian capital abroad, foreign borrowing, expatriates' transfers, and foreign investments. Determining the financing sources is very important and, in particular, the mechanism by which this financing will be carried out. Each source will be detailed separately to indicate the relative contribution of this source in the total funding required.

1. Internal sources

The main problem that most developing countries suffer from is the contradiction between the great need for resources and the scarcity and limitations of these sources. Securing these sources in the post-war reconstruction phase is the greatest future challenge; in light of the contraction of GDP and the destruction of the infrastructures. Syria has lost a large part of its capabilities, and the ability to self-financing the reconstruction phase has become limited due to the enormous reconstruction needs.

It can be said that it is more appropriate if the funding of reconstruction depends on national sources. External financing may make the national economy vulnerable to adverse conditions, causing heavy burdens at the repayment stage.

A. Own resources

These include state public revenues, part of which is allocated to investment spending; nevertheless, the severe contraction of all economic sectors has adversely affected the state's public revenue. As a result, the tax collection level has decreased significantly, and the government has become dependent on indirect taxes and fees.

Oil revenues have declined significantly, from an average of 29% of overall public revenues between 2004-2010, as all foreign companies operating in the oil sector suspended their activities in Syria in response to the sanctions on Syria since mid-2011. Oil production declined from 387 thousand barrels/day in 2010 to 170 thousand barrels/day in 2012, and as the battles intensified in late 2012, 90% of oil wells were out of the government control. Consequently, the average oil production

---

[86] URL://https://www.unescwa.org/news/syrian-experts-discuss-post-conflict-reconstruction-policies-after-political-agreement-syria.

from 2013 to 2017 was about 15 thousand barrels/day.[87] The Syrian oil exports amounted to $4.25 bn in 2010, declined to about $3 bn in 2011, and $0.25 bn in 2012, and since 2013 Syria turned into an oil-importing country, with an average oil import $1.5 bn between 2013-2017.[88]

It is difficult to ascertain the return of oil resources to finance the state's general budget in the proportions that were provided before the crisis, as the oil sector is not expected to recover in a short time, because it needs restoration and huge costs, especially in the areas controlled by ISIS, due to the sabotage of this sector in those areas. Also, the return of oil activity is subject to the lifting of the sanctions on Syria.

As a whole, Total public revenue volume has increased, from SP 454 bn in 2010 to SP 1881 bn in 2019 (an increase of 314%). However, in light of inflation and the decline in the Syrian pound's purchasing power, and therefore the ability of these funds is shrinking every year, it dropped from about $8 bn in 2010 to $3.78 bn in 2019. Besides, the allocated portion of investment spending has decreased from 43% of the total budget in 2010 to 28% in 2019 (reached its lowest level in 2013 with 20%).

Also, as previously mentioned, the general budget decreased from $16.2 bn to $7.8 bn in 2019 while the lowest estimate of direct and indirect war losses is at least $200 bn, which is equivalent to the Syrian budget for 25 years.

Thus, the decline in public revenues and the proportion of investment spending is reflected negatively on the government's ability to influence economic activity and active contribution in financing reconstruction.

B. Domestic borrowing

The Syrian government can rely on domestic borrowing by offering treasury bills and bonds for public subscription. These securities can be bought through the savings of individuals and banks' idle funds.

Family savings are an essential part of domestic saving. Many Syrian families, because of economic, social, and cultural factors, save part of their income in the form of gold or buy foreign currencies (U.S. dollars). These savings, which were collected over many years, have been partially eroded during the crisis years to cover the high living expenses.

---

[87] Data from the Organization of Arab Petroleum Exporting Countries oil OAPEC. Oil production in Syria http://oapecdb-sys.oapecorg.org:8080/apex/f?p=101:4:0::NO:RP:P4_COUNTRY,P4_RESERVE,P4_UNIT,P4_UNIT_CHANGED,P4_UNIT_DEF:113,1,30,30,30

[88] URL://http://cbssyr.sy/ - Central Bureau of Statistics, Foreign Trade Statistics Bulletin.

The amount of savings has decreased from $9.56 bn to $2.57 bn in 2011 to turns into negative numbers, as illustrated in *Fig. 3.5*. Thus, their ability to contribute to reconstruction financing is reduced as a result of the use of a large portion of these savings during the crisis. Despite that, some families still have savings and can use them in the future, if government bonds and Islamic Sukuk are offered to the public to finance attractive investments.

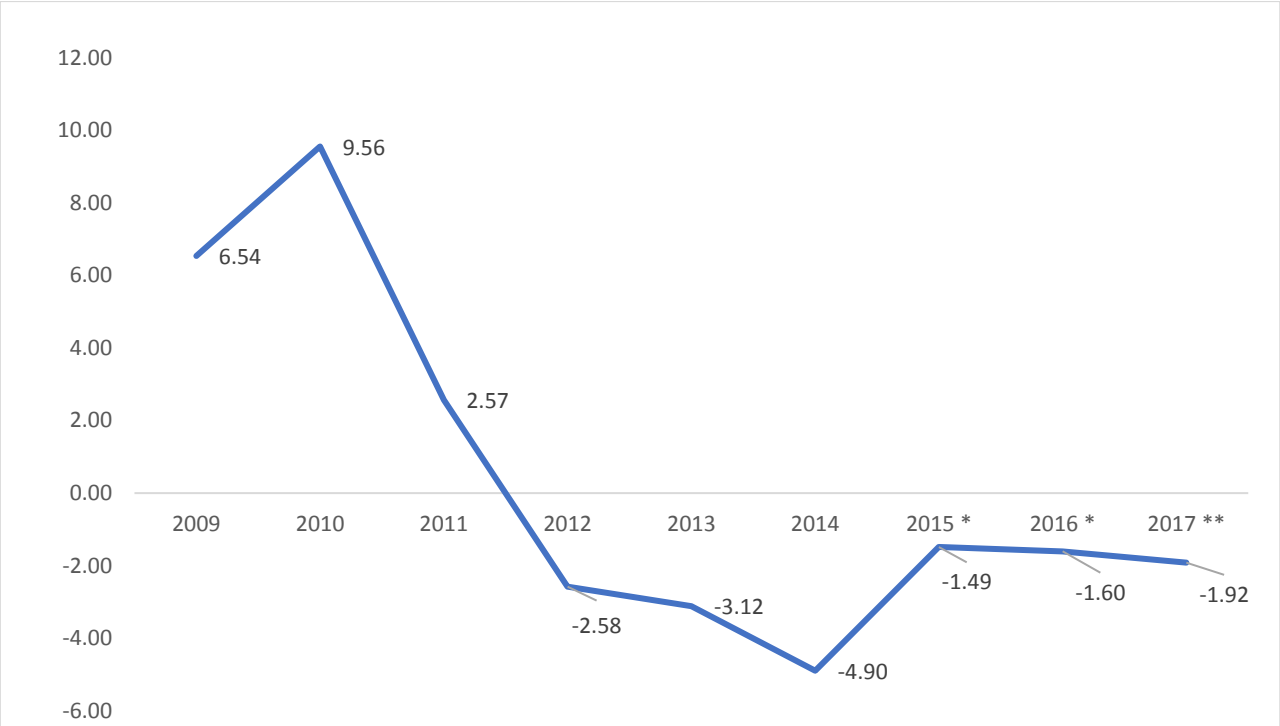

Fig. 3.5. Savings from 2009 to 2017 (SP bn)

Source: author's calculation according to the Central Bureau of Statistics annual reports.

As for banks, the banking sector in Syria consists of 20 banks (6 governmental and 14 private banks, 3 of them are Islamic). However, during the crisis period, Syrian public and private banks did not demonstrate that they can play the minimum role expected of them. It was difficult for banks under the current legislation, to play their role during the first years after the crisis.[89]

Despite the existence of a law regulating the operation of investment banks, there are still no investment banks in Syria. The law specified 15 investment activities for these banks, including financing the investment activity and BOT projects, participation in the establishment of companies, investment funds with an ownership up to 15% of the investment fund capital.[90]

However, banks' deposits have accumulated throughout the crisis years, reaching SP 3900 bn by the end of 2018 ($7.83 bn according to the exchange rate at the end of 2018). Compared to 2010,

[89] Fadlieh, Abed. The challenges of financing the reconstruction process in Syria. A working paper presented to the Conference of Reconstruction and Development in Syria. Faculty of Economics. Damascus. 2014. P.7. (In Arabic)
[90] Legislative Decree No. 56 of 2010. (In Arabic).

the volume of bank deposits decreased from $31.2 bn (which is equivalent to SP 1400 bn based on the exchange rate in 2010).

During the years of the crisis, banks were exposed to the problem of borrowers defaulting, prompting banks to reduce lending operations at the beginning of the crisis. Recently, it started to improve after the situation began to stabilize.

Table 3.2 indicates that the size of idle funds at the end of 2018 amounted to SP 1724 bn ($3.48 bn), it represents 44% of the total deposits, which is not used for reasons related to the bank's policy or the circumstances affecting it.

And even though the amount of idle funds in the Syrian banking sector is tiny compared to the size of the funding needed for reconstruction. It is possible to employ this part of deposits in the reconstruction process by investing in government bonds or Islamic Sukuk or granting long-term loans. Also, it should not be ignored the Syrians deposits in Lebanese banks, estimated at $45 bn. Once the situation in Syria stabilizes, a considerable portion of these deposits will return to Syria.

Table 3.2

Idle funds in the Syrian banking sector until the end of 2018 (SP bn)

	Deposits	Reserve requirements[91]	Lendable funds	Credit & loans	Financial assets	Idle funds
Public banks	2,460	123	2,337	1,517	0	820
Private banks	951.02	47.55	903.47	222.09	30.73	650.66
Islamic banks	488.60	24.43	464.17	207.30	3.10	253.77
Total	3,900	195	3,705	1,946	34	1,724

Source: author's calculation according to the Syrian Central Bank data. (for details see appendix 4).

It is worth mentioning that the Ministry of Finance issued treasury bills and bonds in 2010 to finance the deficit, the size of the subscription by the banks amounted to about SP 7.3 bn (equivalent to $154 million), and all of these securities were fully due at the end of 2015. Nevertheless, the internal borrowing experience through the issuance of government bonds cannot be considered a successful experience, as it was limited to issuance without trading these bonds in the secondary market.[92]

[91] The reserve requirement is calculated at 5% of the total deposits, Decision of the Prime Minister No. 5938 of 2011.
[92] Funding for Reconstruction - Needs and Potential Resources, Damascus Center for Research and Studies. 2017. P.6. (In Arabic).

2. External sources

External sources of financing are needed, as domestic sources and savings are unable to provide sufficient funding to pay the reconstruction bill. Foreign loans, transfers from expatriates and workers abroad, foreign investments, international grants and subsidies, and the Syrian capital abroad are the most important sources of external financing.

A. Transfers from expatriates and workers abroad

Remittances are an effective and contributing tool in improving development indicators and recipient countries' economies if the appropriate environment exists. The balance of net transfers in Syria enjoyed a surplus throughout the period 2000-2017; these transfers have a significant role in providing foreign exchange and reducing the deficit in the balance of payments. We note from *Fig. 3.6* the increase in the volume of net transfers due to the high number of Syrian expatriates after the crisis.

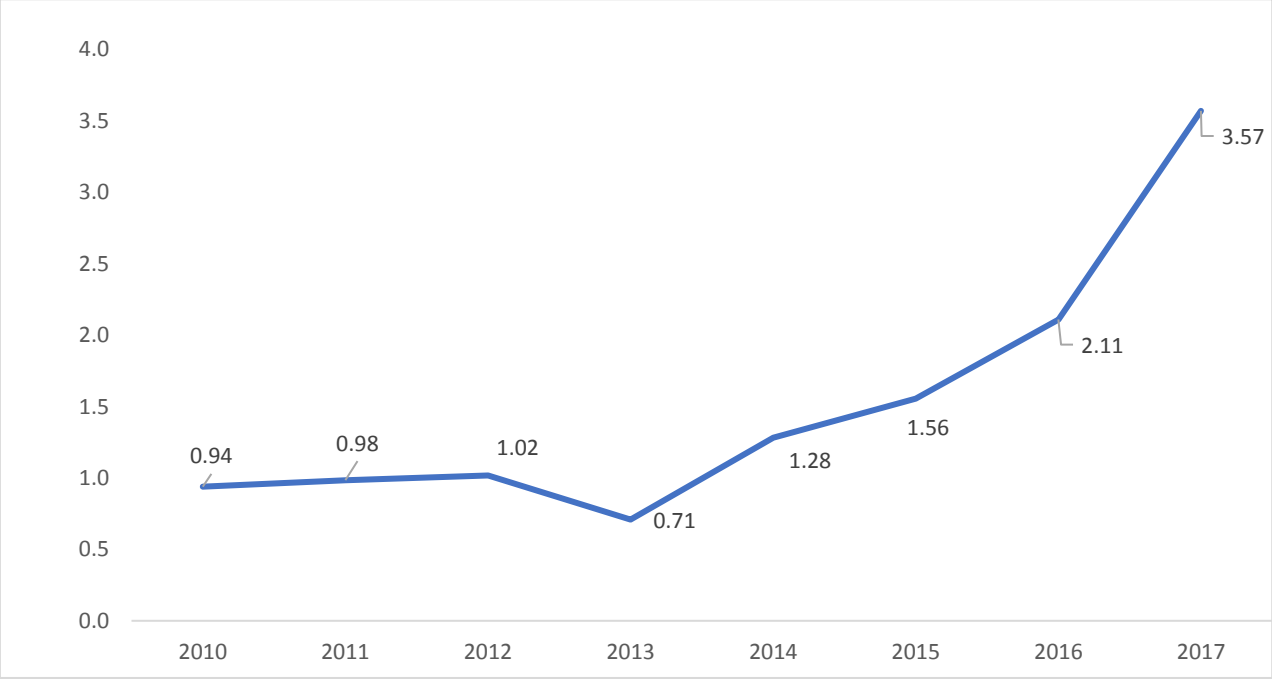

Fig. 3.6. Net current transfers from 2010 to 2017 ($ bn)

Source: author's calculation according to the Central Bureau of Statistics annual reports.

However, it must be taken into consideration that transfers took a specific form during the crisis, supporting families' spending on living requirements. It is not possible to know whether they will be used for future investment purposes, and to what extent they can contribute to raising the country's funding capacity.

B. Syrian capital abroad

Many elite investors decided to leave Syria and transfer most of their capital outside the country throughout the war; the majority of this money was reinvested in neighboring countries. Some investors relocated their activities to Turkey, Jordan, Egypt, and the United Arab Emirates after the Syrian regime permitted them to move their equipment out,[93] this is one of the worst economic consequences of the crisis.

It is estimated that the Syrians' investment in Egypt is approximately $800 million in Egypt,[94] concentrated in clothes and restaurants. This number represents the minimum of Syrian investments in Egypt, given that many investors register their companies under Egyptian partners' names to avoid administrative complications and time-consuming procedures. In Turkey, Syrian businesses constitute 20% of all foreign-owned companies and hold nearly 7% of all foreign capital, estimated at $500 million.[95]

In Jordan, the estimated FDI that came from Syria was about $1 bn.[96] Simultaneously, in the United Arab Emirates, estimations indicate that the Syrian money attracted by the Emirati market since 2011 amounts to $40 bn.[97]

However, the end of the crisis in Syria does not necessarily mean the return of the Syrian money left; therefore, it is necessary to provide a legal and regulatory environment and improve the investment climate to attract the funds of the expatriate Syrians abroad.

C. Foreign loans

Until the mid-1990s, economic policy in Syria tended to rely heavily on external debt to secure development requirements. But since 2005, the government worked to reschedule its debts belonging to the former Soviet Union (Russia), which accounted for the bulk of the debt, and to rely on foreign loans only in specific cases that have a clear advantage for Syria. The statistical data indicate that the total foreign loans amounted to about $4.6 bn in 2008 after it was about $19 bn in 2005.[98]

---

[93] Hamoud, al-Mahmoud. The War Economy in the Syrian Conflict: The Government's Hands-Off Tactics. Carnegie Endowment for International Peace. 2015. P.8.
[94] Haj Yahya, Firas. The Syrians in Egypt: Significant Investments in a Volatile Environment, 2018. Arab Reform Initiative, research papers. 2018. P.6. (In Arabic)
[95] Memişoğlu F. The Syrian Community in Turkey: Perspectives, Prospects, and Policies. Public Policy and Democracy Studies (PODEM) Report. 2018. P.21.
[96] Dhingra R. Syrian Refugees and the Jordanian Economy, Muftah, 2014.
[97] Al-Junaidi M. The Gulf and the Destination of Syrian Capital: The United Arab Emirates Example. Arab Reform Initiative, research papers. 2018. P.7. (In Arabic).
[98] Al-Jundi Kh. Investment in the Syrian Arab Republic, Damascus University Economic and Legal Sciences – 2010:26.(2). P.624. (In Arabic).

Loans from countries, institutions, and international organizations have favorable facilities, such as grace periods, low-interest rates, and debt service conditions. However, political and economic pressures represent the biggest obstacle to obtain these loans. While insufficient internal resources to finance the reconstruction in Syria may lead it to seek external loans.

The Syrian government can conclude agreements with countries such as China, Russia, and Iran to provide loans or credit facilities. Or through the Development Bank of the BRICS group (Brazil, Russia, India, China, and South Africa), and these countries can call for an international conference of donor countries for the reconstruction of Syria.

D. Foreign investment (Project finance form):

Project finance can adjust to less-than-favorable environments in the least developed countries and can substitute for the lack of institutional and financial development.[99] This form of financing is characterized by providing a series of multiple financial options, as it provides the possibility to expand and modernize the infrastructure (major roads, hanging and water bridges, ports, airports, and rebuilding cities), by financing projects with the necessary financial resources from outside the government budget, without an increase in public debt and budget deficits.

The negotiation method between the government and foreign companies to invest in large mega-projects determines the method of financing, the period for operation, and the final ownership of the funded companies.

3.3 The investment climate, opportunities, and challenges for applying project finance in Syria

There is no doubt that the reconstruction stage that Syria is witnessing differs significantly from the pre-crisis stage due to the change in many circumstances. Therefore, creating an investment climate by updating laws and activating financial legislation and international agreements following a sound scientific approach enhances efforts to achieve comprehensive economic development.

Syria has many attractions for investment, due to its strategic location, diversification of its natural resources, experienced and qualified human resources, and the availability of attractive investment opportunities for investment in all sectors.

[99] Kleimeier S., Versteeg R. Project finance as a driver of economic growth in low-income countries. Review of Financial Economics. 2010 Apr 1;19(2):49-59.

Legislative Decree No. 8 of 2007 provided many advantages, exemptions, and guarantees that encourage investment and facilitate its procedures, to provide a safe and stimulating investment environment for the local and foreign investors. According to this decree:[100]

- The investor is allowed to own and lease the lands and real estate necessary to establish or expand investment projects, provided that they are used exclusively for the project's purposes.
- The non-Syrian investor obtains work and residence permits for him and his family for the duration of the project's implementation and operation.
- The investor has the right to transfer the proceeds of the disposal of his share from the project abroad, after paying its taxes.
- The investor has the right to transfer the profits achieved annually after paying its taxes.

Also, "Participatory Law" was issued in 2016, which allowed the private sector to invest in infrastructure projects, public utilities, and projects owned by the public sector.[101] Thus, "Participatory Law" paved the way for the private sector to invest in all the sectors. The "Participatory Law" in Syria did not specify the contracting period, as participatory contract models can range from simple contractual arrangements, to provide a specific service such as garbage collection, to complex arrangements for designing, constructing, operating, maintaining, and financing infrastructure services.[102]

Also, some laws and decisions were issued to develop the investment climate in certain sectors during recent years, including:

- Electricity and energy sector:
    - Work on amending the Electricity Law to restructure the industry in line with the establishment of a competitive market, and the participation of investors from the private sector to generate and distribute electricity.
    - Determining incentive prices for the purchase of electricity from renewable energy projects.[103]
- Industry sector: Reducing customs fees by 50% on raw materials and production inputs needed for local industries.[104]

[100] Legislative Decree No. 8 of 2007. (In Arabic).
[101] Law No. 5 of 2016, Participatory Law. (In Arabic).
[102] Sirob R. The fields of application of participatory projects between the public and private sectors and their prospects in Syria. Damascus Centre for Research and Studies. 2017. P.13.(In Arabic).
[103] Cabinet Decision No. 1763 of 2016. (In Arabic).
[104] Decree No. 172 of 2017. (In Arabic).

- Real estate development and investment sector:
  - Building an information infrastructure and implementing a comprehensive information network.
  - Updating the geographical atlas, which includes detailed data on the updated real estate development areas.
  - Update the forms of the initial license application, registration application, and the final license application, that are required to establish a real estate development and investment company.
- Tourism sector: Allow investors who have completed their investment projects (according to the BOT formula) with a period less than the actual implementation period mentioned in the contract, to invest these projects without paying investment fees for the remaining period of the implementation period.[105]

The Syrian Investment Agency has also been established under Legislative Decree No. 9 of 2007. Its role is the continuous monitoring and updating of the investment map to know the existing resources and capabilities; the agency works to provide the appropriate investment climate and prepares the investment map that includes investment projects of strategic importance, with updating it continuously. It also tracks project implementation and overcomes obstacles that hinder its implementation.

Table 3.3

Some of the investment opportunities offered by the Syrian Investment Agency

Sector	**Investment opportunity**
Manufacture	▪ Cancer drugs production ▪ Medical gas production (oxygen gas) ▪ Production of electric lifts ▪ Artificial limb manufacturing
Agriculture	▪ Cultivation of Damascene rose and medicinal herbs
Mining	▪ Generating electrical energy from oil shale ores ▪ Zeolite investment project
Health Care	▪ Project for medical solutions ▪ Project for hospital supplies ▪ Project for medical tools
Energy	▪ Electricity generation based on solar energy sources ▪ Generating electric energy by wind turbines ▪ Steam generating station with a capacity of 300 megawatts

Source: compiled by the author based on Syrian Investment Agency.

[105] Resolution No. 364 of 2012. (In Arabic).

In 2019, the Syrian Investment Agency offered 188 private investment opportunities distributed among several cities; they were diversified in manufacturing, extractive industry, tourism, electricity and energy, agriculture, and livestock production.[106] Some examples of the opportunities are listed in *Table 3.3*.

However, applying the project finance technique would face a range of challenges, the most important of which are:

1. Continuation of international economic sanctions against Syria

Since the beginning of the crisis, economic sanctions have been imposed on Syria, including the banning of relations with the Central Bank of Syria and the Commercial Bank of Syria, the restriction of financial transactions, insurance, and funds transfer. It would affect funding sources, raise borrowing costs, the cost of importing raw materials, as well as the investment process.

2. Instability of the Syrian Pound exchange rate

The exchange rate is a measure of the government's success in managing macroeconomics. The fluctuation and instability of the exchange rate confuse the government with the lack of confidence of investors and individuals in the Syrian pound, which poses a great challenge to investment.

3. Weak institutional capacity in Syria

The governmental and private institutions in Syria suffer from great weakness, as most of them lack expertise, transparency, accountability, and effective performance. They also suffer from extreme centralization, whether at the level of decision-making, planning, or implementation; this is considered a challenge in the implementation of new investments.

4. Financial and administrative corruption

According to the 2019 Corruption Perceptions Index issued by Transparency International, Syria is among the world's ten most corrupt countries.[107] A study by Syrian economic researchers found that corruption rates in Syria amounted to 30% of GDP.[108] Administrative and financial corruption affects the cost of the required investments and reduces the return on investment, making it more challenging to attract new investments. There are concerns that corruption will affect bids and potential projects in the reconstruction phase.

[106] URL://http://sia.gov.sy/ - Syrian Investment Agency
[107] Transparency International. Corruption Perceptions Index. 2019.
[108] Jamil Q., Lectures on Economic Planning in Syria, Institute of Planning, Economic and Social Development in Damascus. (In Arabic).

5. Lack of privatization programs for the public sector

This is due to several reasons, including the government's reluctance to abandon the public economic sector, and the social role played by the economic and non-economic public sector institutions.

6. The slow process of implementing economic reform programs

Syria adopts a gradual transition to the social market economy; therefore, it requires more time to implement economic reforms. Such as giving up government support for the prices of some materials, openness to the outside world, the abolition of import restrictions, monetary and fiscal policy reforms, and privatizing the public sector.

7. The modernity and weakness of the financial market

The financial market is one of the most critical pillars of economies with its accumulation of savings and direct investment. It also serves as a platform for large-scale shareholders and other joint-stock companies, thus, attracting inflows from domestic and foreign investment.

8. Excluding some strategic sectors from the domestic and foreign private sectors

There is a monopoly on some strategic sectors in the national economy, such as electricity generation, water supply, and landline phones. Hence, these monopolies restrict foreign investment flows as they are desirable sectors by international companies using project finance mechanism.

9. Low degree of protection of intellectual property and trademarks

Despite the issuance of laws protecting intellectual property and patents in Syria, they need more transparency and the effective application of those laws.

3.4 Evaluation model of the project finance investments

A comprehensive model for assessing an investment project's quality should be built based on multicriteria analysis that considers many indicators. The selected criteria will help to take into account the interests and benefits of all stakeholders in the project financing system.

This model was built based on Titov model,[109] to make decisions on the implementation of investment projects in Syria; it is necessary to analyse many evaluation criteria of various nature specific to Syria's investment climate.

[109] Титов В.О. Проектное финансирование инновационных инвестиционных проектов. Докторская диссертация, Санкт-Петербург, 2014.

For these purposes, we introduce vectors characterizing the parameters of the investment project in Syria. These vectors are set based on expert estimates, except for the vectors of economic characteristics of the project, which is set by the stakeholders of the project financing system, and the vectors of the government support characteristics of the project, which is set by the Syrian government. Many other external indicators affect the evaluation of the project. Still, we will not pay attention to it, as it is difficult to predict or control it, such as the inflation rate, exchange rate stability, and political stability.

Description of vector components $\vec{S} = \{S_p\}_{p=1}^{m_1}$, $\vec{G} = \{G_p\}_{p=1}^{m_2}$, $\vec{E} = \{E_p\}_{p=1}^{m_3}$, $\vec{W} = \{W_p\}_{p=1}^{m_4}$, $\vec{P} = \{P_p\}_{p=1}^{m_5}$, $\vec{I} = \{I_p\}_{p=1}^{m_6}$, as well as the acceptable intervals for their changes, specified taking into account the quality requirements for the investment project, are given in appendix 5.

It is assumed that each component of the vectors $\vec{S}$, $\vec{G}$, $\vec{E}$, $\vec{W}$, $\vec{P}$, $\vec{I}$ is determined with the help of experts is defined as a pair of values: the average value of this indicator and standard deviation characterizing the range of experts' opinions. Then we give the first element of this pair with a macron symbol, and the second with a tilde. So, for example, the average project cost estimate E_1 will be designated as $\overline{E_1}$, and its standard deviation as $\widetilde{E_1}$.

To simplify the calculations, we introduce the following generalized vectors of dimension $m = m_1 + \ldots + m_6$:

$$\vec{Q} = \{\bar{Q}_p\}_{p=1}^{\mathrm{m}} = (\bar{S}_1,\ldots,\bar{S}_{m_1},\bar{G}_1,\ldots,\bar{G}_{m_2},\bar{E}_1,\ldots,\bar{E}_{m_3},\bar{W}_1,\ldots,\bar{W}_{m_4},\bar{P}_1,\ldots,\bar{P}_{m_5},\bar{I}_1,\ldots,\bar{I}_{m_6})$$

$$\vec{q} = (\tilde{S}_1,\ldots,\tilde{S}_{m_1},\tilde{G}_1,\ldots,\tilde{G}_{m_2},\tilde{E}_1,\ldots,\tilde{E}_{m_3},\tilde{W}_1,\ldots,\tilde{W}_{m_4},\tilde{P}_1,\ldots,\tilde{P}_{m_5},\tilde{I}_1,\ldots,\tilde{I}_{m_6})$$

In this case, the corresponding acceptable change intervals from appendix 5 can also be represented in a similar way in the form of vectors of dimension m $\vec{Q}_{min}$ and $\vec{Q}_{max}$. Then $Q_{pmin} \leq \bar{Q}_p \leq Q_{pmax}$, $p \in 1 \div m$, where Q_{pmin} and Q_{pmax} are components of the vectors $\vec{Q}_{min}$ and $\vec{Q}_{max}$ respectively. Further in the formulas, we will also use the notation:

$$\vec{Q}_1 = \{\bar{S}_p\}_{p=1}^{\mathrm{m}_1} = (\bar{S}_1,\ldots,\bar{S}_{m_1});\ \bar{Q}_{1;p} = \bar{S}_p$$

$$\vec{Q}_2 = \{\bar{G}_p\}_{p=1}^{\mathrm{m}_2} = (\bar{G}_1,\ldots,\bar{G}_{m_2});\ \bar{Q}_{2;p} = \bar{G}_p$$

$$etc.$$

To solve the problem of assessing the quality of an investment project, taking into account the multicriteria approach to the problem of choosing optimal solutions, with the goal of separate

optimization of quantitative and qualitative parameters of the project, we introduce a set of functions $F_i\left(\vec{Q}_i\right)$ of the following form:

$$F_i\left(\vec{Q}_i\right) = \prod_{p_i=1}^{m_i}\left(\Xi_{i;p_i}\left(\bar{Q}_{i;p_i}\right)\right)^{h_{i;p_i}} \quad , i \in 1 \div 6 \qquad (1)$$

Where $\bar{Q}_{i;p_i}$ – is the average expected value of the p_i indicator of the i block, m_i – the number of indicators in the i block, $h_{i;p_i} > 0$ $(p_i \in 1 \div m_i)$ - parameters specified on the basis of statistics for other similar investment programs, and $\Xi_{i;p_i}\left(\bar{Q}_{i;p_i}\right)$ - normalizing function for the corresponding indicator. This function can be built with the help of experts, using a scale from 0 to 100%.

Function (1) is the homogeneous Cobb-Douglas function m_i of arguments with degree of homogeneity $\hat{h}_i = \sum_{p_i=1}^{m_i} h_{i;p_i}$; $\left(\hat{h}_i > 0\right)$. It is obvious that if $\hat{h}_i > 1$ - we will have a positive impact on the scale, for $\hat{h}_i = 1$ - constant, and for $\hat{h}_i < 1$ - a negative impact. The choice of this type of function is due, in particular, to the fact that it allows to replace the contribution of one factor (indicator) with the contribution of another, at the same time, taking into account the non-linearity of this process and avoiding high values of the function for critically small values of individual indicators.

The elasticity with respect to the argument $\bar{Q}_{i;p_i}$ is calculated in the standard way:

$$\varepsilon_{p_i} = \left(\frac{\bar{Q}_{i;p_i}}{\mathrm{F}_i}\right)\frac{dF_i}{d\bar{Q}_{i;p_i}} = h_{i;p_i} \ (p_i \in 1 \div m_i)$$

To decide the adequacy of the existing economic environment of the project, we formulate the following balance model, which includes the following linear restrictions:

$$F_i\left(\vec{Q}_i\right) \geq B_i, \qquad (2)$$

Where B_i - is the minimum allowable value of the evaluation function of the i block,

$$\sum_{p_i=1}^{m_i} c_{i;p_i}\tilde{Q}_{i;p_i} \leq D_i, \qquad (3)$$

D_i - is an indicator characterizing the maximum allowable risk for the i block (in the absence of correlation), $\tilde{Q}_{i;p_i}$ - is the standard deviation of the indicator, the average expected value of which is determined through $\bar{Q}_{i;p_i}$, $c_{i;p_i}$- weights that characterize the significance of deviations for a particular indicator.

In case of violation of inequalities of type (2), we proceed to the stage of correction of indicators that cause this violation.

At this stage, several problems arise, firstly, which indicators have the most negative impact, secondly, according to what indicators the function is most elastic, thirdly, what indicators are cheaper to manage. Thus, within the framework of each severe problem, we strive to maximize the beneficial effect, that is, changing the block evaluation function at the lowest cost of effort.

In the case of violation of inequality of type (3), it makes sense to clarify what caused the divergence of expert opinions that caused it, and if necessary, correct both the assessment methodology and the composition of experts.

Another version of the model building path is based on the emergence of a new premise: on the possibility of controlling the majority of the described components of the vector of $\vec{Q}$ factors within the framework of the model itself. The introduction of this premise is appropriate if the question of whether a project should be implemented has been decided in advance, and the assessment should answer the question about the specific details in the implementation rather than about its feasibility as such (for example, a socially significant project).

Then, to the vectors $\vec{Q}_i$ and $\vec{q}_i$ will be added m_i - dimensional vectors $\vec{U}_i$, the components of which $U_{i;p_i}$ are variable quantities, that separate the controlled change of the average value of the p_i indicator of group i from $\bar{Q}_{i;p_i}$. Thus, the changed average value of the p_i indicator becomes equal to $\bar{Q}_{i;p_i} + U_{i;p_i}$.

As a result, the balance model with 12 restrictions changes to 6 optimization models of the following form:

$$F_i\left(\vec{U}_i\right) = \prod_{p_i=1}^{m_i}\left(\Xi_{i;p_i}\left(\bar{Q}_{i;p_i} + U_{i;p_i}\right)\right)^{h_{i;p_i}} \rightarrow max,$$

$$Q_{i;p_i;min} - \bar{Q}_{i;p_i} \leq U_{i;p_i} \leq Q_{i;p_i;\max} - \bar{Q}_{i;p_i}, p_i \in 1 \div m_i, \qquad (4)$$

$$\sum_{p_i=1}^{m_i} w_{i;p_i} U_{i;p_i} = W_i,$$

In this case $Q_{i;p_i;min}$ and $Q_{i;p_i;\max}$ - are values identical to the components with the number $p_i + \sum_{p_i=1}^{m_i} m_j$ of the vectors $\vec{Q}_{min}$ and $\vec{Q}_{max}$ respectively, and showing acceptable intervals of change of p_i indicator of group i; $w_{i;p_i}$- coefficients that reflect the cost of changing the p_i indicator of group i, and W_i - budget for group i allocated for these changes.

In this case, it is assumed that each block of indicators has its own task and budget. From an economic point of view, this version of the mathematical formulation can be explained by the fact that the control and examination of blocks are carried out separately by various departments, accordingly, the financing of corrective changes in each block is carried out at the expense of a separate amount allocated by a specific agency and having a strictly targeted purpose.

We can assume the opposite: in the course of financing these changes, a single budget W is formed, the funds of which can be used to correct a particular indicator. Such a statement of the problem looks more logical from the point of view of economic feasibility, but, firstly, its implementation may be difficult due to the corresponding administrative and bureaucratic barriers, secondly, in this case, six optimization problems turn into one task involving multicriteria optimization.

$$F_i\left(\vec{U}_i\right) = \prod_{p_i=1}^{m_i}\left(\Xi_{i;p_i}\left(\bar{Q}_{i;p_i} + U_{i;p_i}\right)\right)^{h_{i;p_i}} \rightarrow max, i \in 1 \div 6\,,$$

$$Q_{i;p_i;min} - \bar{Q}_{i;p_i} \leq U_{i;p_i} \leq Q_{i;p_i;\max} - \bar{Q}_{i;p_i}\,, p_i \in 1 \div m_i\,, i \in 1 \div 6\,, \qquad (5)$$

$$\sum_{i=1}^{6}\sum_{p_i=1}^{m_i} w_{i;p_i}U_{i;p_i} = W\,.$$

When deciding on the assessment of the quality of an investment project, it is necessary to proceed from a multi-step nature, due to the following factors:

- The availability of priorities when choosing the quality of individual elements of an investment project.
- Solving the problem of quality optimization, taking into account the initial information on the project.
- Monitoring of project parameters so that they do not go beyond established limits.

In this regard, the multi-criteria formulation of the problem of evaluating the quality of an investment project deserves consideration. However, it is obvious that from a mathematical point of view, the solution of problem (5), even at the conceptual level, is a separate serious problem of measuring the value of different blocks.

Such an assessment of the quality of the investment project is comprehensive. It allows you to optimize the values of the project parameters and optimize the risks associated with the implementation of the project, as well as choose the most attractive general contractor.

CONCLUSION

This thesis has presented the concept of project finance as one of the methods of financing a project, a financing mechanism that aims to get the project off the sponsor's balance sheet; thus, the funding required will be repaid from the revenues of the project only.

Financing structure must be designed to achieve a successful financing project, that structure should be embodied in a set of contracts which will enable each of the parties to gain from the arrangement. There is a wide range of funding sources for Project finance in both public and private markets available to a project.

Project finance differs from other financial structures in several aspects, it is more efficient in allocating the risk and the revenue compared; it is also accompanied by higher transaction costs than conventional financing. Project finance as a financing model is appropriate for large projects like infrastructure projects, as it is possible to earn enough returns to cover necessary expenses and the higher transaction costs in this mechanism compared to conventional financing. Project finance advantages and disadvantages are discussed in depth in Chapter 1.

Based on the findings of the study, the world market reflects wide variations in the field of project financing. The thesis sheds light on the Arabic experience in the project finance market. This mechanism has been used in 18 Arab countries. The member states of the Gulf Cooperation Council (GCC), given its extensive energy resources, actively engaged in project finance transactions, enhancing their role in the global economy. The transactions have primarily been used in three areas: energy and water supply, petrochemicals, and the oil and gas industry, with a growing tendency to use Islamic project finance structure. Some projects that demonstrate the application of project finance technique in different sectors in the GCC countries were analysed. These cases highlight some of the principles of Islamic project finance.

Given the violence suffered by Syria and the destruction that afflicted the various economic and service sectors, there is an urgent need to rebuild what was destroyed to stimulate the Syrian economy.

The scale of the damage and losses suffered by the Syrian economy during the war years was reviewed, ranging between 200-388 billion dollars. According to the researcher's estimates, the largest part of the losses was for the gross domestic product, as these accumulated annual losses amounted to $131.25 bn at the end of 2017. Thus, the need to search for funding sources is evident during the reconstruction phase, to compensate for infrastructure damage, halt the decline in the gross domestic product, and achieve positive growth rates.

The Syrian economy's potential to contribute to the reconstruction financing was analysed from the available sources, and it was found that:

- Public revenues declined from $8 bn in 2010 to $3.78 bn in 2019.
- The budget deficit continued to increase, constituting in 2019, about 44% of the budget.
- The savings have been consumed almost completely by society due to the consequences of the crisis.
- Deposits in the banking sector decreased significantly, and idle funds in the Syrian banking sector is estimated at $3.48 bn at the end of 2018.

In light of these levels of resources and their inability to cover the required needs or the effective contribution to reconstruction financing. In the case of improving the laws and regulations governing banking work, investing idle funds of the Syrian banking sector in projects in the reconstruction phase, it can contribute to the financing of part of the investment needs in the future.

Consequently, we conclude the necessity of applying the mechanism of project finance. This is due to the increasing need to invest in infrastructure and investment projects, as the state's public alone cannot cover these needs in the early stages of reconstruction. We found that the private sector can participate in projects owned by the public sector, as Participatory Law No. / 5 / has allowed the private sector to enter the infrastructures, public utilities, and projects owned by the public sector.

This mechanism should not be considered as a magic solution and an ideal recipe that is entirely risk-free. Rather, it should be seen as a means and not a goal, as it falls within a comprehensive economic reform program.

However, Syria is still not prepared to apply project finance mechanism, as it has not completed the updating of some laws and legislations that include financial, banking, insurance, tax, and accounting treatment of these projects, in addition to the lack of sufficient experience in dealing with these contracts, and the failure to create a cultural and public environment.

Therefore, necessary laws must be issued, especially concerning foreign ownership and their share of ownership. A comprehensive plan for the reconstruction process must also be developed, which includes an accurate estimate of the extent of the damage to the infrastructure, the prioritization of sectoral and regional priorities, and a timetable for implementation.

The next stage also requires a high ability to manage the resources allocated for the implementation of projects, to monitor performance, and to end with accountability and strict penalties for corruption offenders. Also, it is necessary to work on developing the Damascus Stock Exchange, so that the Syrian government can attract and direct the capitals to serve the needs of the

economy, and to increase the issuance of treasury bonds (in the local and foreign currency), although there were some modest attempts before.

Finally, conditions must be created for the return of national capital from abroad, by reviewing the laws and regulations that hinder bureaucracy, achieve equal opportunities between investors, and eliminate corruption.

A multifactor optimization model for evaluating projects was developed to identify the most promising project, taking into account risk and uncertainty factors that allow the selection of one project, as well as a comprehensive assessment of the quality of this project.

Six groups of indicators were selected that characterize a project from various angles. These groups were designated in the form of vectors consisting of two elements: the aggregate of the average value and the standard deviation of each indicator of each group; the latter characterizes the range of opinions of experts, with determining the minimum and maximum acceptable values for each indicator. The choice of the function built to solve the problem, which allows you to evaluate each indicator's block, was justified.

The calculation result was a balance model, in which the result for each block of indicators of different nature, should not fall below the minimum acceptable value, and the product of the standard deviation by its significance for all indicators in the block, should be less than the maximum acceptable indicator characterizing the risk from expert estimates.

A number of recommendations were proposed in case of violation of inequalities. Also, when there is no question of evaluating the feasibility of the project (for example, a socially significant project), additional version for the implementation of the model was, if it is possible to manage the change in indicators.

Change can be carried out using the budget allocated for each block of indicators, or a single budget, the funds of which can be used to correct a particular indicator. Such an assessment of the quality of the investment project is comprehensive. It allows you to optimize not only the values of the project parameters but also the risks associated with the implementation of the project, as well as choose the single most attractive project.

As a result of this model's implementation, an optimal investment program that meets the requirements could be chosen.

LIST OF REFERENCES

Laws and Legislations

1. القانون رقم /5/ لعام 2016، قانون التشاركية بين الجهات العامة والخاصة.
2. القانون رقم /10/ لعام 1991، قانون تشجيع الاستثمار.
3. المرسوم التشريعي رقم /8/ لعام 2007، قانون الاستثمار.
4. المرسوم التشريعي رقم /56/ لعام 2010، إحداث مصارف الاستثمار في سورية.
5. المرسوم التشريعي رقم /172/ لعام 2017، تخفيض الرسوم الجمركية بنسبة 50% على المواد الأولية ومدخلات الإنتاج اللازمة للصناعات المحاية.
6. المرسوم التشريعي رقم /3/ للعام 2020، القاضي بتعديل المادة الثانية من المرسوم التشريعي رقم /54/ للعام 2013، منع التعامل بغير الليرة السورية كوسيلة للمدفوعات.
7. قرار مجلس الوزراء رقم /5938/ لعام 2011، نسبة الاحتياطي الإلزامي.
8. قرار مجلس الوزراء رقم /1763/ لعام 2016، تحديد أسعار الكهرباء المنتجة من مشاريع وأنظمة الطاقات المتجددة.
9. القرار رقم /364/ لعام 2012، السماح باستثمار المشاريع المنفذة بمدة أقل.

Books

10. Ahmed P.A., Fang X. Project finance in developing countries. World Bank Publications, 1999. 102 p.
11. Alfen H.W., Weber B. Infrastructure as an Asset Class: Investment Strategies, Project Finance and PPP. 2010. 286 p.
12. Benoit P. Project finance at the World Bank: an overview of policies and instruments. The World Bank, 1996. 110 p.
13. Bernstein P.L., Bernstein PL. Against the Gods: The remarkable story of risk. New York: Wiley, 1996. 364 p.
14. Caselli S., Gatti S., editors. Structured finance: Techniques, products and market. Springer, 2017. 1456 p.
15. Çakmak C., Ustaoglu M. Post-conflict Syrian state and nation building: Economic and political development. Springer, 2015. 128 p.
16. Clews R. Project finance for the international petroleum industry. Academic Press, 2016. 416 p.
17. Davis H.A. Project finance: Practical case studies. London: Euromoney Publications, 1996. 252 p.
18. Sapte D.W. A guide to Project Finance. London: Denton Wilde Sapte, 2004. 80 p.
19. Dewar J., editor. International project finance: law and practice. Oxford University Press, 2011. 559 p.
20. Elbashir N.O., El-Halwagi M.M., Economou I.G., Hall, K.R. Natural Gas Processing from Midstream to Downstream. John Wiley & Sons, 2019. 584 p.
21. Fabozzi F.J., de Nahlik C. Project financing 8th edition. 2012. 550 p.
22. Fight A. Introduction to project finance. Elsevier, 2005. 205 p.
23. Finnerty J.D. Project financing. Asset-based financial engineering. Wiley & Sons, 2013. 560 p.

24. Gatti S. Project Finance in Theory and Practice: Designing, Structuring, and Financing Private and Public Projects. Academic Press, 2012. 496 p.

25. Hoffman S.L. The law and business of international project finance: a resource for governments, sponsors, lawyers, and project participants. Cambridge University Press, 2007. 474 p.

26. Khan M.F., Parra R.J. Financing large projects: using project finance techniques and practices. Singapore: Pearson Prentice Hall, 2003. 672 p.

27. Lynch P. Financial modelling for project finance. Euromoney Publications, 2010. 212 p.

28. Megginson W.L., Smart S.B. Introduction to corporate finance. Nelson Education, 2008. 886 p.

29. Morrison M.R., editor. The Principles of Project Finance. Gower Publishing, Ltd., 2012. 528 p.

30. Nevitt P.K., Fabozzi F.J. Project financing. London, U.K.: Euromoney Books, 7th edition, 2000. 498 p.

31. Tan W. Principles of project and infrastructure finance. Routledge, 2007. 280 p.

32. Tinsley R. Advanced project financing: Structuring risk. Euromoney Books, 2000. 436 p.

33. Triantis J.R. Project finance for business development. John Wiley & Sons, 2018. 400 p.

34. Merna T., Chu Y., Al-Thani F.F. Project finance in construction: A structured guide to assessment. John Wiley & Sons, 2010. 174 p.

35. Yescombe E.R. Principles of project finance. Academic Press, 2013. 560 p.

36. Yescombe E.R. Public-Private Partnerships: principles of policy and finance. Elsevier, Springer-Verlag, 2008. 368 p.

37. Калмыкова Г.С. Проектное финансирование: мировой опыт и перспективы для России. Экономические и социальные проблемы глобальной мировой финансовой системы, 2012. 312 с.

38. Катасонов В.Ю., Морозов Д.С. Проектное финансирование: организация, управление риском, страхование. М.: Анкил, 2000. 270 с.

39. Никонова И.А., Смирнов А.Л. Проектное финансирование в России. Проблемы и направления развития. М.: Консалтбанкир, 2016. 216 с.

40. Никонова И.А. Проектный анализ и проектное финансирование. М.: Альпина Паблишер, 2012. - 153 с.

41. Родионов И.И., Божья-Воля Р.Н. Проектное финансирование. СПб: Алетейя, 2015. 345 с.

42. Смирнов А.Л. Проектное финансирование: инструменты и технологии: Монография. М.: МАКС Пресс, 2013. 457 с.

43. Федотова М.А., Никонова И.А., Лысова Н.А. Проектное финансирование и анализ. М.: Юрайт, 2014. 144 с.

Thesis and Dissertations

44. Busse J. Forfaiting: an alternative financing model to project finance for PPPs? Doctoral dissertation, Universidade Católica Portuguesa, 2014.

45. Morgan R.S. Project finance: analysis and cases. Doctoral dissertation, Massachusetts Institute of Technology, 1976.

46. Wang S. Project Investment and Project Financing: A study on Business Case and Financing Models. Master thesis, Institutt for produksjons-og kvalitetsteknikk, 2012.

47. Титов В.О. Проектное финансирование инновационных инвестиционных проектов. Докторская диссертация, Санкт-Петербург, 2014. 194 с.

Journals

48. Alexander A.J. Shifting title and risk: Islamic project finance with western partners. Mich. J. Int'l L. 2010;32:571-612.

49. Atalla T., D'Errico M.C. Energy project financing in the GCC region: An empirical investigation. Energy Transitions. 2019;3(1–2):13–30.

50. Baghdadi A., Kishk M. Saudi Arabian aviation construction projects: Identification of risks and their consequences. Procedia Engineering. 2015 Jan 1;123:32-40.

51. Benkovic S., Milosavljevic M. Advantages and disadvantages of project financing. Manage. 2009;52:31-9.

52. Daher J. The political economic context of Syria's reconstruction: a prospective in light of a legacy of unequal development. Middle East Directions (MED), Wartime and Post-Conflict in Syria, European University Institute. 2018.

53. Farooq M.O., Selim M. Conceptualization of the real economy and Islamic finance: Transformation beyond the asset-link rhetoric. Thunderbird International Business Review. 2019 Sep;61(5):685-96.

54. Karol R.S. The Separatist Period in Syria, 1961-1963. Asian and African Studies, 2009.75(2):145-68.

55. Kleimeier S., Megginson W.L. Are project finance loans different from other syndicated credits? Journal of Applied Corporate Finance, 2000.13(1):75-87.

56. Kleimeier S., Versteeg R. Project finance as a driver of economic growth in low-income countries. Review of Financial Economics. 2010 Apr 1;19(2):49-59.

57. Lee K.H., Son S. H. Trends and implications of Islamic Project finance: A study on the GCC region. SSRN Electronic Journal. 2013. DOI: 10.2139/ssrn.2320959

58. Megginson W.L. Introduction to the special issue on project finance. Review of Financial Economics. 2010 Apr;19(2):47-8.

59. Mohammadia M.K. Trends of Project Finance in the World Market and in Arab Countries. Finance: Theory and Practice, 2020;24(1):24-33.

60. Negasi M.I. Financing Higher Education in the Islamic World Through Waqf (Endowment). European Journal of Multidisciplinary Studies. 2017 May 19;2(5):136-42.

61. Езангина И.А., Сторожилов Н.А. Усиление роли институтов развития в механизме банковского проектного финансирования. Финансы: теория и практика. 2017;21(6).

62. Карпов А.С., Карпова К.В. Современное состояние экономики Сирийской Арабской Республики. Вестник Московского гуманитарно-экономического института. 2018; 3:39.

63. Фаузер В.В. Проектное финансирование: мировой опыт и российская практика. Корпоративное управление и инновационное развитие экономики Севера. 2007;8:69.

64. Шиукашвили Т.Т., Кравченко М.А. Преимущества и недостатки проектного финансирования. Экономика и социум. 2016(7):383-5.

Researches and workings papers

65. Abdul-Latheef A.V. Critical success factors for public and private project partnership in Saudi Arabia. 2019.

66. Adelekan S., Wamuziri S., Binsardi B. Evaluation of Islamic financing products for housing and infrastructure development. Procs of 29th Annual ARCOM Conference, 2-4 September 2013. Reading, UK, Association of Researchers in Construction Management, 191-200. 2013.

67. Aloadah Y., ElKhoury G., Bashir F. Upgrading the Saudi chemical cluster.

68. Chaouk M., Pagliari R., Miyoshi C. A critical review of airport privatisation in the Kingdom of Saudi Arabia: Case study of Medina Airport. Case Studies on Transport Policy. 2019 Jun 1;7(2):433-42.

69. Comer B. Project Finance teaching note. Retrieved July. 1996;5:2011.

70. Dhingra R. Syrian Refugees and the Jordanian Economy, Muftah. 2014. URL://http://muftah.org/syrian-refugees-jordanian-economy/.

71. Esty B.C. The economic motivations for using project finance. Harvard Business School. 2003 Feb;28:1-42.

72. Gobat J., Kostial M.K. Syria's conflict economy. International Monetary Fund; 2016.

73. Hamdi H., Sbia R. Short-run and Long-run causality between electricity consumption and economic growth in a small open economy. 2013.

74. Hassan M., Dridi J. The effects of the global financial crisis on Islamic and conventional banks: A comparative study. IMF Working Paper WP/10201, 2010.

75. Hamoud, al-Mahmoud. The War Economy in the Syrian Conflict: The Government's Hands-Off Tactics. Carnegie Endowment for International Peace. 15 December 2015. URL://https://carnegieendowment.org/2015/12/15/war-economy-in-syrian-conflict-government-s-hands-off-tactics/in4s

76. Lim J.J., Saborowski C. Export diversification in a transitioning economy: the case of Syria. The World Bank; 2011.

77. Raphaeli N. Syria's fragile economy. Middle East Review of International Affairs. 2007 Jun;11(2):34-51.

78. Sengupta V. Project Finance Transactions in the Middle East: Focus on Islamic Project Finance. Available at SSRN 2293595. 2013 Jun 7.

Statistical compilations and reports

79. Aijaz A., Abayomi A. Mobilizing Islamic finance for infrastructure public-private partnerships. World Bank Group. Washington D.C., USA, 2017.

80. Chan-Lau J.A., Kelhoffer K., Zhang J. Long-Run Economic Growth: Does Project Finance Matter. Moody's Analytics, 2016 Jul.

81. Daher J. The deep roots of the depreciation of the Syrian pound. Middle East Directions (MED), European University Institute. 2019.

82. Islamic financial policy. In: Dar H., Azmi S., Bushra Shafique B., eds. Global Islamic financial report 2016. Berlin, London: Gerlach Press; 2016:259-278.

83. Memişoğlu F. The Syrian Community in Turkey: Perspectives, Prospects, and Policies. Public Policy and Democracy Studies (PODEM) Report. 2018 URL://http://podem.org.tr/en/researches/the-syrian-community-in-turkey-perspectives-prospects-and-policies/

84. Project Finance International PFI. Annual League Tables. 1995-2018.

85. The Syrian Arab Republic, Central Bureau of Statistics. Annual statistical group. 2000-2017.

86. Transparency International. Corruption Perceptions Index. 2019.

87. World Bank. World Development Report 1994: Infrastructure for Development: Executive Summary. World Bank, 1994.

References in the Arabic language

88. اقتصاديات إعادة الإعمار بعد انتهاء الصراع في منطقة الشرق الأوسط وشمال افريقيا، المرصد الاقتصادي لمنطقة الشرق الأوسط وشمال افريقيا، 2017.

89. الأزمة السورية الجذور والآثار الاقتصادية والاجتماعية، المركز السوري لبحوث السياسات في الجمعية السورية للثقافة والمعرفة، 2013.

90. تأثيرات الأزمة في الاقتصاد السوري 2011-2015، مركز دمشق للأبحاث والدراسات، 2016.

91. تمويل إعادة الإعمار الحاجات والمصادر المحتملة، مركز دمشق للأبحاث والدراسات، 2017.

92. سيروب، رشا. مجالات تطبيق المشاريع التشاركية بين القطاعين العام والخاص وآفاقها في سورية، مركز دمشق للأبحاث والدراسات، 2017.

93. سيروب، رشا. التشاركية بين القطاعين العام والخاص في سورية (دراسة تحليلية مقارنة لبدائل التمويل)، رسالة دكتوراة، كلية الاقتصاد، جامعة دمشق، 2012.

94. الشعار، جيلان. أثر المتغيرات السلوكية في الأزمة الراهنة لصرف الليرة السورية، رسالة ماجستير، كلية الاقتصاد، جامعة دمشق. 2018.

95. فضلية، عابد. واقع الاستثمار في ظل قانون الاستثمار رقم 10 لعام 1991 ، مجلة جامعة دمشق للعلوم الاقتصادية والقانونية ، المجلد 17 ، العدد 2 ، 2001.

96. فضلية، عابد. تحديات تمويل عملية إعادة الإعمار في سوريا. ورقة عمل مقدمة لمؤتمر إعادة البناء والتنمية في سورية. جامعة دمشق، كلية الإقتصاد. دمشق. 2014.

97. الكفري، مصطفى. تقرير مناخ الاستثمار في الجمهورية العربية السورية، 2003.

98. اسماعيل، عصام. انعكاس الأزمة على أرقام العجز في الموازنة العامة في سوريا، مجلة جامعة تشرين للبحوث والدراسات العلمية، سلسلة العلوم الاقتصادية والقانونية، المجلد 40، العدد 4، 2018.

99. عثمان، سلمان. عباس، غادة. عفراء، خضور. أهم محددات التضخم في سورية خلال الفترة (1990-2010)، مجلة جامعة تشرين للبحوث والدراسات العلمية، سلسلة العلوم الاقتصادية والقانونية، المجلد 37، العدد 2، 2015.

100. حساني، عبد الرزاق. تطور سعر صرف الليرة السورية وعلاقته بالرقم القياسي لأسعار المستهلك خلال الأزمة الراهنة، مجلة جامعة دمشق للعلوم الاقتصادية والقانونية، المجلد 31، العدد 2، 2015.

101. الجندي، خزامى. الاستثمار في الجمهورية العربية السورية، مجلة جامعة دمشق للعلوم الاقتصادية والقانونية، المجلد 26، العدد 2، 2010.

102. جميل، قدري. محاضرات حول التخطيط الاقتصادي في سوريا ، معهد التخطيط والتنمية الاقتصادية والاجتماعية بدمشق.

103. حاج يحيى، فراس. السوريون في مصر: استثمارات كبيرة في جو متقلب. مبادرة الاصلاح العربي، أوراق بحثية. 2018.

104. الجنيدي، ماهر. دول الخليج وجهة رؤوس الأموال السورية: دولة الإمارات العربية مثالاً. مبادرة الاصلاح العربي، أوراق بحثية. 2018.

Internet resources and electronic databases

105. URL://http://www.cb.gov.sy/ar/ - Central Bank of Syria

106. URL://http://cbssyr.sy/ - Central Bureau of Statistics in Syria

107. URL://https://gaca.gov.sa/web/en-gb/page/home - General Authority of Civil Aviation in Saudi Arbia

108. URL://http://sia.gov.sy/ - Syrian Investment Agency

109. URL://http://ir.tav.aero/ - TAV Airports

110. URL://http://www.pfie.com/ - Thomson Reuters Project Finance International

111. URL://https://www.unescwa.org/ - United Nations, ESCWA

112. URL://https://www.worldbank.org/ - World Bank

APPENDICES

Appendix 1

Total loans of project finance in Arab world ($ bn)

	Saudi Arabia	Qatar	UAE	Oman	Egypt	Kuwait	Bahrain	Morocco	Jordan	Yemen	Algeria	Tunisia	Syria	Lebanon	Libya	Palestine	Djibouti	Sudan	Total Arab Countries
1995	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
1996	1.81	1.91	-	0	-	1.19	-	-	-	-	-	-	-	-	-	-	-	-	4.92
1997	2.20	0.35	-	2.07	0.25	1.2	-	0.90	-	-	-	-	-	0.10	-	-	-	-	7.07
1998	0.85	1.11	-	0	1.19	-	-	0.06	-	-	-	-	-	-	-	-	-	-	3.21
1999	0.60	0.91	1.18	0.06	0.85	-	-	0.70	-	-	-	0.09	-	-	-	-	-	-	4.40
2000	0.85	-	1.10	0.51	-	-	-	0.96	0.11	-	-	-	-	-	0.05	0.09	-	-	3.67
2001	2.18	1.13	1.64	2.03	0.65	0.90	-	-	-	-	-	-	-	-	0.05	-	-	0.03	8.60
2002	0.28	0.30	-	0.68	-	0.81	0.25	-	-	-	0.07	-	-	-	-	-	-	-	2.39
2003	0.82	1.29	1.86	0.91	0.95	-	1.35	0.23	-	-	0.38	-	-	-	-	-	-	-	7.79
2004	3.73	6.11	1.80	1.61	1.85	0.60	1.93	-	0.22	-	-	0.36	-	-	-	-	0.04	-	18.25
2005	2.47	14.08	2.37	5.67	2.18	0.75	0.15	0.61	-	-	0.79	-	-	-	-	-	-	-	29.06
2006	15.31	4.72	2.10	3.15	1.58	2.50	1.20	-	-	-	-	-	-	-	-	-	-	-	30.57
2007	8.08	9.55	11.72	3.32	4.05	1.40	0.64	-	0.39	-	0.64	-	-	-	-	-	-	-	39.78
2008	10.31	4.40	4.21	0.45	2.11	-	-	0.14	0.12	2.78	0.28	0.62	0.30	-	-	-	-	-	25.72
2009	1.90	0.95	5.43	0.80	-	-	1.34	1.16	0.34	-	-	-	-	-	-	-	-	-	11.92
2010	10.00	-	1.65	1.36	1.01	-	0.60	-	-	-	-	-	-	-	-	-	-	-	14.62
2011	3.28	4.18	0.99	1.50	-	0.17	0.28	-	0.09	-	-	-	-	-	-	-	-	-	10.49
2012	3.69	-	0.27	0.04	2.60	-	0.5	1.89	0.15	-	-	-	-	-	-	-	-	-	9.13
2013	6.94	1.77	5.76	0.27	-	1.39	-	-	0.61	-	-	-	-	-	-	-	-	-	16.73
2014	4.46	-	2.84	3.10	0.62	0.06	-	2.18	0.23	-	-	-	-	-	-	-	-	-	13.48
2015	13.08	0.86	1.15	0.91	0.20	-	-	0.13	0.16	-	-	-	-	-	-	-	-	-	16.49
2016	7.97	2.97	3.13	5.92	0.34	3.98	2.24	-	0.97	-	-	-	-	-	-	-	-	-	27.51
2017	2.49	-	2.49	1.37	2.48	-	0.73	-	2.01	-	-	0.03	-	-	-	-	-	-	11.59
2018	1.09	-	0.16	4.87	1.72	-	1.54	-	0.19	-	-	-	-	-	-	0.008	-	-	9.59
Total	**104.45**	**56.6**	**51.84**	**40.59**	**24.65**	**14.95**	**12.75**	**8.95**	**5.58**	**2.78**	**2.16**	**1.1**	**0.3**	**0.1**	**0.1**	**0.1**	**0.04**	**0.03**	**327.07**

Appendix 2

Number of transactions of project finance in Arab world

	Saudi Arabia	Qatar	UAE	Oman	Egypt	Kuwait	Bahrain	Morocco	Jordan	Yemen	Algeria	Tunisia	Syria	Lebanon	Libya	Palestine	Djibouti	Sudan	Total Arab Countries
1995	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
1996	4	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	7
1997	1	1	-	2	1	1	-	1	-	-	-	-	-	1	-	-	-	-	8
1998	2	3	-	-	4	-	-	1	-	-	-	-	-	-	-	-	-	-	10
1999	2	2	2	1	2	-	-	1	-	-	-	1	-	-	-	-	-	-	11
2000	1	-	1	2	-	-	-	1	1	-	-	-	-	-	1	1	-	-	8
2001	4	3	1	4	1	1	-	-	-	-	-	-	-	-	1	-	-	1	16
2002	1	1	-	1	-	2	1	-	-	-	1	-	-	-	-	-	-	-	7
2003	2	3	2	1	1	-	1	1	-	-	1	-	-	-	-	-	-	-	12
2004	5	3	2	6	1	1	3	-	2	-	-	1	-	-	-	-	1	-	25
2005	3	12	3	10	3	1	1	1	-	-	3	-	-	-	-	-	-	-	37
2006	7	4	3	6	5	1	1	-	-	-	-	-	-	-	-	-	-	-	27
2007	8	6	12	5	4	1	1	-	2	-	1	-	-	-	-	-	-	-	40
2008	5	4	7	1	5	-	-	1	1	1	1	1	1	-	-	-	-	-	28
2009	1	1	8	2	-	-	1	1	1	-	-	-	-	-	-	-	-	-	15
2010	4	-	3	2	1	-	1	-	-	-	-	-	-	-	-	-	-	-	11
2011	4	1	2	2	-	1	1	-	1	-	-	-	-	-	-	-	-	-	12
2012	5	-	3	1	1	-	2	2	1	-	-	-	-	-	-	-	-	-	15
2013	5	3	2	1	-	1	-	-	1	-	-	-	-	-	-	-	-	-	13
2014	4	-	5	3	3	1	-	2	7	-	-	-	-	-	-	-	-	-	25
2015	8	1	3	5	1	-	-	1	3	-	-	-	-	-	-	-	-	-	22
2016	3	2	4	8	1	1	2	-	7	-	-	-	-	-	-	-	-	-	28
2017	3	-	4	2	14	-	1	-	4	-	-	1	-	-	-	-	-	-	29
2018	2	-	1	4	3	-	2	-	3	-	-	-	-	-	-	1	-	-	16
Total	**85**	**52**	**68**	**69**	**51**	**13**	**18**	**13**	**34**	**1**	**7**	**4**	**1**	**1**	**2**	**2**	**1**	**1**	**423**

Appendix 3

List of all transactions in the GCC between 1995-2018

Year	Country	Project	Value ($ m)	Sector
1995	Saudi Arabia	N/A	100	Oil & Gas
1996	Saudi Arabia	Sceco East	500	Utilities (Power & Water)
1996	Saudi Arabia	Saudi Chevron	240	Oil & Gas
1996	Saudi Arabia	Ibn Rushd	770	Petrochemicals
1996	Saudi Arabia	Hadeed	300	Mining
1996	Qatar	Qatargas	378	Oil & Gas
1996	Qatar	Ras Laffan	1536	Oil & Gas
1996	Kuwait	Equate Petrochemicals	1197	Petrochemicals
1997	Saudi Arabia	Yanpet	2200	Petrochemicals
1997	Qatar	Qatar Fuel Additives Co (Qafac)	350	Petrochemicals
1997	Oman	Oman LNG	1995	Oil & Gas
1997	Oman	Salalah Port	77	Transportation & Infrastructure
1997	Kuwait	Equate Petrochemicals	1200	Petrochemicals
1998	Saudi Arabia	Al-Jubail Petrochemical Company	720	Petrochemicals
1998	Saudi Arabia	Sharq	125	Petrochemicals
1998	Qatar	Nodco	510	Oil & Gas
1998	Qatar	Qatar Vinyl Co	474	Petrochemicals
1998	Qatar	Qapco	130	Petrochemicals
1999	Saudi Arabia	Sadaf	300	Petrochemicals
1999	Saudi Arabia	Hadeed	300	Mining
1999	Qatar	Q-Chem	749	Petrochemicals
1999	Qatar	Dabhol LNG	165	Oil & Gas
1999	UAE	Taweelah	578	Utilities (Power & Water)
1999	UAE	Thuraya	600	Telecoms
1999	Oman	Manah	60	Utilities (Power & Water)
2000	Saudi Arabia	Ibn Rushd	852	Petrochemicals
2000	UAE	Total Tractebel	1096	Utilities (Power & Water)
2000	Oman	Salalah IWPP	100	Utilities (Power & Water)
2000	Oman	Oman Gas Co	413	Oil & Gas
2001	Saudi Arabia	Jubail United Petrochemical	1100	Petrochemicals
2001	Saudi Arabia	SCE Ghazlan	501	Utilities (Power & Water)
2001	Saudi Arabia	NIC	300	Transportation & Infrastructure
2001	Saudi Arabia	Saudi Chevron Phillips SCP	275	Petrochemicals
2001	Qatar	Qatar Fertilizer Co (QAFCO)	400	Agriculture & Forestry
2001	Qatar	Ras Laffan	580	Oil & Gas
2001	Qatar	Ras Abu Fontas	140	Oil & Gas
2001	UAE	Shuweihat IWPP	1638	Utilities (Power & Water)
2001	Oman	AES Barka SAOC	348	Utilities (Power & Water)
2001	Oman	Al Kamil Power Co	100	Utilities (Power & Water)
2001	Oman	Oman LNG	1356	Oil & Gas
2001	Oman	Dhofar Power Co	226	Utilities (Power & Water)
2001	Kuwait	Equate Petrochemicals	900	Petrochemicals
2002	Saudi Arabia	Al-Jubail Fertilizer	280	Agriculture & Forestry
2002	Qatar	Qatar Fuel Additives Co (Qafac)	300	Petrochemicals
2002	Oman	Oman India Fertiliser Co	677	Agriculture & Forestry
2002	Kuwait	Utilities Development Company	378.8	Utilities (Power & Water)
2002	Kuwait	Sulaibiya Waste Water Project	429.9	Utilities (Power & Water)
2002	Bahrain	Hidd Power Expansion Project	254.9	Utilities (Power & Water)
2003	Saudi Arabia	Saudi Petrochemical	649.8	Petrochemicals
2003	Saudi Arabia	Sadaf Cogeneration Project	170	Utilities (Power & Water)
2003	Qatar	Qatar Gas to Liquids Project	700	Oil & Gas
2003	Qatar	Qatar LNG Shipping	134.7	Transportation & Infrastructure
2003	Qatar	Qatar Vinyl Co	459.8	Petrochemicals

2003	UAE	Umm Al Nar Power Co	1777.6	Utilities (Power & Water)
2003	UAE	Ajman Sewerage Company Ltd	77.6	Utilities (Power & Water)
2003	Oman	Sohar Refinery Co	908	Oil & Gas
2003	Bahrain	Aluminium Bahrain BSC (ALBA)	1350	Mining
2004	Saudi Arabia	Etisalat Saudi Arabia	2350.4	Telecoms
2004	Saudi Arabia	Saudi Chevron Phillips SCP	250.2	Petrochemicals
2004	Saudi Arabia	Safco IV	330	Petrochemicals
2004	Saudi Arabia	Saudi Chevron Phillips SCP	281	Petrochemicals
2004	Saudi Arabia	Saudi Aramco IPP	515.1	Utilities (Power & Water)
2004	Qatar	Rasgas II LNG Vessels	568.8	Transportation & Infrastructure
2004	Qatar	Qatargas	4105.4	Oil & Gas
2004	Qatar	Dolphin Energy Ltd (DEL)	1440	Oil & Gas
2004	UAE	Union Water and Electricity Co	400	Utilities (Power & Water)
2004	UAE	CMS Emirates Power Co	1399.9	Utilities (Power & Water)
2004	Oman	Oman Polypropylene Co Ltd	240	Oil & Gas
2004	Oman	Suez Tractebel	550	Utilities (Power & Water)
2004	Oman	Oman LNG	192.6	Oil & Gas
2004	Oman	Salalah Port	110.1	Transportation & Infrastructure
2004	Oman	Energy Spring LNG Carrier Ltd	155	Transportation & Infrastructure
2004	Oman	Oman Methanol Co	360	Petrochemicals
2004	Kuwait	Equate Petrochemicals	600	Petrochemicals
2004	Bahrain	Aluminium Bahrain BSC (ALBA)	450	Mining
2004	Bahrain	Bahrain Petroleum Co	850	Oil & Gas
2004	Bahrain	Suez Tractebel	625	Utilities (Power & Water)
2005	Saudi Arabia	Shuaiba IWPP	1959.2	Utilities (Power & Water)
2005	Saudi Arabia	Pacific Star VLCC Ships	50	Transportation & Infrastructure
2005	Saudi Arabia	Hadeed Expansion Co	457.3	Mining
2005	Qatar	Ras Laffan	970.9	Oil & Gas
2005	Qatar	Ras Laffan B IWPP	753	Utilities (Power & Water)
2005	Qatar	Qatofin	760.8	Petrochemicals
2005	Qatar	Qatar Steel Co	558.35	Mining
2005	Qatar	Q-Chem	1401	Petrochemicals
2005	Qatar	Qatargas 3	2828.8	Oil & Gas
2005	Qatar	Dolphin Energy Ltd (DEL)	3450	Oil & Gas
2005	Qatar	QGTC LNG Shipbuilding	869.5	Transportation & Infrastructure
2005	Qatar	MOL LNG Ships	1650	Transportation & Infrastructure
2005	Qatar	Teekay LNG Ships	468	Transportation & Infrastructure
2005	Qatar	Peninsula LNG Transport 4	157	Transportation & Infrastructure
2005	Qatar	Qatar Fuel Additives Co (Qafac)	212	Petrochemicals
2005	UAE	Jebel Ali Power Project	150	Utilities (Power & Water)
2005	UAE	Fujairah Wastewater Plant	106	Utilities (Power & Water)
2005	UAE	Al Taweelah B and CIWPP	2110.5	Utilities (Power & Water)
2005	Oman	Qalhat LNG	688.1	Oil & Gas
2005	Oman	SoharAluminium Smelter	1545.3	Mining
2005	Oman	Oman LNG	1307.9	Oil & Gas
2005	Oman	Oman Shipping Company	478	Transportation & Infrastructure
2005	Oman	Oman India Fertiliser Co	674	Agriculture & Forestry
2005	Oman	Al Kamil Power Co	82	Utilities (Power & Water)
2005	Oman	Sohar Int'l Urea & Chem Ind	431.4	Agriculture & Forestry
2005	Oman	Nawras	220	Telecoms
2005	Oman	Barr Al Jissah Resort Co	105	Leisure & Property
2005	Oman	Oman Refinery Co LLC	140	Oil & Gas
2005	Kuwait	MTC Expansion	750	Telecoms
2005	Bahrain	United Stainless Steel (USCO)	153	Mining
2006	Saudi Arabia	Tasnee Ethane/Propane Plant	2015.2	Petrochemicals
2006	Saudi Arabia	Rabigh Refinery Expansion Co	6014.5	Petrochemicals
2006	Saudi Arabia	Yanbu Petrochemical Complex	3500	Petrochemicals
2006	Saudi Arabia	Sharq Polyethylene Expansion	2430	Petrochemicals
2006	Saudi Arabia	National Petrochem	520.1	Petrochemicals
2006	Saudi Arabia	Majid Al Futtaim Group of Cos	300	Leisure & Property

2006	Saudi Arabia	Al-Zamil Petrochemical Company	525	Petrochemicals
2006	Qatar	Qatargas 3	500.5	Oil & Gas
2006	Qatar	QGTC LNG Shipbuilding	3211.2	Transportation & Infrastructure
2006	Qatar	Ras Abu Fontas	485.4	Oil & Gas
2006	Qatar	Q-Chem	525.3	Petrochemicals
2006	UAE	Fujairah Independent Water	1500	Utilities (Power & Water)
2006	UAE	STAR Cement Co LLC	104.3	Agriculture & Forestry
2006	UAE	Jebel Ali Refinery	500	Oil & Gas
2006	Oman	Aromatics Oman LLC	1125	Petrochemicals
2006	Oman	Qalhat LNG	688.1	Oil & Gas
2006	Oman	Sohar Refinery Co	646.1	Oil & Gas
2006	Oman	AES Barka SAOC	319.3	Utilities (Power & Water)
2006	Oman	Oman Gas Co	234.5	Oil & Gas
2006	Oman	Energy Spring LNG Carrier Ltd	136	Transportation & Infrastructure
2006	Kuwait	Equate Petrochemicals	2500	Petrochemicals
2006	Bahrain	Al-Hidd IWPP	1204	Utilities (Power & Water)
2007	Saudi Arabia	Marafiq IWPP	3312	Utilities (Power & Water)
2007	Saudi Arabia	Alujain Propane Plant	411	Petrochemicals
2007	Saudi Arabia	Zahr Third Propylene Plant	855.6	Petrochemicals
2007	Saudi Arabia	Tihama Power Generation Co Ltd	550	Utilities (Power & Water)
2007	Saudi Arabia	Shuqaiq IWPP	1387.2	Utilities (Power & Water)
2007	Saudi Arabia	Saudi Petrochemical	575.1	Petrochemicals
2007	Saudi Arabia	Saudi Intl Petrochemical Co	564.3	Petrochemicals
2007	Saudi Arabia	Third Jeddah Container	425	Transportation & Infrastructure
2007	Qatar	Qatargas 4	3024	Oil & Gas
2007	Qatar	Qatalum	2749.4	Mining
2007	Qatar	Qatar Fertilizer Co (QAFCO)	1600.5	Agriculture & Forestry
2007	Qatar	LNG CPC	336	Oil & Gas
2007	Qatar	Mesaieed IPP	1335.5	Utilities (Power & Water)
2007	Qatar	Ras Abu Fontas A1	499.8	Utilities (Power & Water)
2007	UAE	Total Tractebel	1102.2	Utilities (Power & Water)
2007	UAE	EMAL	4875	Mining
2007	UAE	Al Hikma Development Co	410	Industry
2007	UAE	Palm Water LLC	525	Utilities (Power & Water)
2007	UAE	Indago Petroleum Ltd	40	Oil & Gas
2007	UAE	Fujairah F2 IWPP	1342	Utilities (Power & Water)
2007	UAE	Sahara Cooling Ltd	100	Industry
2007	UAE	Emirates Steel Plant	600.3	Mining
2007	UAE	Al Taweelah B and CIWPP	2140	Utilities (Power & Water)
2007	UAE	OCI Fujairah Cement Plant	285	Agriculture & Forestry
2007	UAE	Ajman Sewerage Company Ltd	100	Utilities (Power & Water)
2007	UAE	ICADIII Limited LLC	198.9	Industry
2007	Oman	Barka IWPP	795.2	Utilities (Power & Water)
2007	Oman	Dhofar Power Co	340.2	Utilities (Power & Water)
2007	Oman	Salalah Methanol Plant	639.4	Petrochemicals
2007	Oman	Sur IWPP	172	Utilities (Power & Water)
2007	Oman	Oman & Sohar Refinery Merger	1370.4	Oil & Gas
2007	Kuwait	KPPC	1400	Petrochemicals
2007	Bahrain	Aluminium Bahrain BSC (ALBA)	641	Mining
2008	Saudi Arabia	Saudi Kayan Petrochemical Co	3759.5	Petrochemicals
2008	Saudi Arabia	Saudi Polymers Co	3590	Petrochemicals
2008	Saudi Arabia	Ma'aden Phosphate Company	2661.5	Mining
2008	Saudi Arabia	King Abdulaziz Hajj Terminal	241.2	Transportation & Infrastructure
2008	Saudi Arabia	Jubail Seamless Pipe Plant	58	Mining
2008	Qatar	Qatar Ship Acquisition and FSO	500.5	Transportation & Infrastructure
2008	Qatar	Ras Abu Fontas A1	432.6	Utilities (Power & Water)
2008	Qatar	Ras Laffan C	1964	Utilities (Power & Water)
2008	Qatar	QGTC LNG Shipbuilding	1499.8	Transportation & Infrastructure
2008	UAE	Paris Sorbonne University	325.8	Leisure & Property
2008	UAE	Yahsat Project	1200.5	Telecoms

2008	UAE	Shuweihat IWPP	945	Utilities (Power & Water)
2008	UAE	Khalifa Port & Industrial Zone	425	Transportation & Infrastructure
2008	UAE	Emirates Steel Plant	700	Mining
2008	UAE	Jebel Ali Refinery	210	Oil & Gas
2008	UAE	Abu Dhabi Sewerage Services Co	408	Utilities (Power & Water)
2008	Oman	Sohar IWPP	446.4	Utilities (Power & Water)
2009	Bahrain	Al Dur IWPP	1341	Utilities (Power & Water)
2009	Saudi Arabia	Rabigh Independent Power Plant	1900	Utilities (Power & Water)
2009	Qatar	QGTC LNG Shipbuilding	949	Transportation & Infrastructure
2009	UAE	Emirates Steel Plant	700	Mining
2009	UAE	Dolphin Energy Ltd	2125.5	Oil & Gas
2009	UAE	Zayed University	902	Leisure & Property
2009	UAE	Shuweihat IWPP	981.4	Utilities (Power & Water)
2009	UAE	Al Wathba Al Allahamah	493.3	Leisure & Property
2009	UAE	ADSSC II	86.1	Utilities (Power & Water)
2009	UAE	Ras Al Khaimah Galvanizing	21.6	Mining
2009	UAE	Dolphin Refinery	124.8	Oil & Gas
2009	Oman	Salalah IWPP	754.2	Utilities (Power & Water)
2009	Oman	AlMusanah LNG Tanker	47.6	Transportation & Infrastructure
2010	Saudi Arabia	Ma'aden Phosphate Company	1699.6	Mining
2010	Saudi Arabia	Al-Jubail Petrochemical Company	5774.4	Petrochemicals
2010	Saudi Arabia	Riyad Independent Power Plant	1225.4	Utilities (Power & Water)
2010	Saudi Arabia	Al Qurayyah IPP	1300	Utilities (Power & Water)
2010	UAE	Fujairah Oil Storage	130	Oil & Gas
2010	UAE	EMAL	420	Mining
2010	UAE	Emirates Steel Plant	1100	Mining
2010	Oman	Barka 3 IPP	704	Utilities (Power & Water)
2010	Oman	Sohar 2 IPP	657.6	Utilities (Power & Water)
2010	Bahrain	Gulf United Steel Co	600	Mining
2011	Saudi Arabia	Al Qurayyah IPP	1430.2	Utilities (Power & Water)
2011	Saudi Arabia	Ma'aden Alcoa Alumina Refinery	998.4	Mining
2011	Saudi Arabia	King Abdulaziz Hajj Terminal	266.8	Transportation & Infrastructure
2011	Saudi Arabia	Jubail Acrylic Monomers Plant	585	Petrochemicals
2011	Qatar	Barzan Gas Plant	4183.5	Oil & Gas
2011	UAE	Shuweihat 3 IWPP	374.5	Utilities (Power & Water)
2011	UAE	Masdar Solar Plant (Shams 1)	612	Utilities (Power & Water)
2011	Oman	Sur IWPP	1206	Utilities (Power & Water)
2011	Oman	Salalah Free Zone Plastic	296.4	Petrochemicals
2011	Kuwait	New Gathering Center 16	175	Oil & Gas
2011	Bahrain	Muharraq Sewerage Treatment	276.9	Utilities (Power & Water)
2012	Saudi Arabia	Sipchem/Hanwha Petrochemical	375.6	Petrochemicals
2012	Saudi Arabia	Tihama CHP Expansion Plant	359.8	Utilities (Power & Water)
2012	Saudi Arabia	Jubail Tasnee/Sahara Plant	1356.3	Petrochemicals
2012	Saudi Arabia	Yanbu Oil Refinery Hydrogen	403	Oil & Gas
2012	Saudi Arabia	Medina International Airport	1192.8	Transportation & Infrastructure
2012	UAE	JK Cement Works Fujairah White	98	Agriculture & Forestry
2012	UAE	IL&FS Prime Terminals FZC	91	Oil & Gas
2012	UAE	Gulf Petrochem FCZ (GPF)	80	Petrochemicals
2012	Oman	Barka IWPP Expansion	42.9	Utilities (Power & Water)
2012	Bahrain	Gulf United Steel Co	373	Mining
2012	Bahrain	JBF Bahrain SPC	123.5	Petrochemicals
2013	Saudi Arabia	Sadara Chemical Co	3959.7	Petrochemicals
2013	Saudi Arabia	Al-Jubail Petrochemical Company	1200	Petrochemicals
2013	Saudi Arabia	Rabigh Independent Power Plant	1176.8	Utilities (Power & Water)
2013	Saudi Arabia	International Diol Company	268.8	Petrochemicals
2013	Saudi Arabia	Polysilicon Technology Co	330.6	Petrochemicals
2013	Qatar	QGTC LNG Shipbuilding	917.2	Transportation & Infrastructure
2013	Qatar	Rasgas II LNG Vessels	425	Transportation & Infrastructure
2013	Qatar	Ras Abu Fontas A2 Expansion	426.3	Utilities (Power & Water)
2013	UAE	Shuweihat IWPP	1164	Utilities (Power & Water)

2013	UAE	EMAL	4600	Mining
2013	Oman	Muscat City Desalination Co	270	Utilities (Power & Water)
2013	Kuwait	Al Zour IWPP	1387	Utilities (Power & Water)
2014	Saudi Arabia	Waad Al Shamal	3783.5	Mining
2014	Saudi Arabia	Abqaiq Hawiyah Ras Tanura CHP	320	Utilities (Power & Water)
2014	Saudi Arabia	Rabigh Independent Power Plant	214	Utilities (Power & Water)
2014	Saudi Arabia	King Abdullah Port Expansion	140.8	Transportation & Infrastructure
2014	UAE	Emirates Steel Plant	1299.9	Mining
2014	UAE	Mirfa IWPP	1207.2	Utilities (Power & Water)
2014	UAE	Fujairah ENOC Vopak Oil	90	Oil & Gas
2014	UAE	Taweelah Aluminium Extrusion	139.8	Mining
2014	UAE	Zora Gas Field	100	Oil & Gas
2014	Oman	Tethys Oil Block 3 & 4	100	Oil & Gas
2014	Oman	CC Energy Development Ltd	150	Oil & Gas
2014	Oman	ORPIC	2850.9	Oil & Gas
2014	Kuwait	New Gathering Center 16	56.8	Oil & Gas
2015	Saudi Arabia	Jizan Air Separation	1789	Oil & Gas
2015	Saudi Arabia	Petrorabigh 1	5200	Oil & Gas
2015	Saudi Arabia	Petrorabigh 2	2000	Oil & Gas
2015	Saudi Arabia	Umm Wual Ma'aden Phosphate	3099.6	Mining
2015	Saudi Arabia	Al-Zamil Petrochemical Company	622.9	Petrochemicals
2015	Saudi Arabia	Riyadh Water Prodn	65	Utilities (Power & Water)
2015	Saudi Arabia	Saudi Riyadh Cooling	120.8	Industry
2015	Saudi Arabia	Saudi Tabreed Jabar Omar	180	Industry
2015	Qatar	Al-Karaana Petrochemical	860	Petrochemicals
2015	UAE	DEWA Solar	260.1	Utilities (Power & Water)
2015	UAE	Zayed University	833.5	Leisure & Property
2015	UAE	Dubai Pks & Resorts District	53	Leisure & Property
2015	Oman	Al Sharqiyah Desalination Co	166.8	Utilities (Power & Water)
2015	Oman	Barka IWPP Expansion	70	Utilities (Power & Water)
2015	Oman	Musandam IPP	235	Utilities (Power & Water)
2015	Oman	Qurayyat Reverse Osmosis	188.1	Utilities (Power & Water)
2015	Oman	Salalah 2 IWPP	248.5	Utilities (Power & Water)
2016	Saudi Arabia	Dhuruma Electricity Co	1450.9	Utilities (Power & Water)
2016	Saudi Arabia	Rabigh Independent Power Plant	1814.5	Utilities (Power & Water)
2016	Saudi Arabia	Yanbu Aramco Sinopec Refining	4700	Oil & Gas
2016	Qatar	Facility D IWPP	2565	Utilities (Power & Water)
2016	Qatar	Ras Abu Fontas 3 Desalination	399.9	Utilities (Power & Water)
2016	UAE	Al Wathba Al Allahamah	345	Leisure & Property
2016	UAE	Steel Pipeline Manufacturing	123.5	Mining
2016	UAE	ENEC Barakah One Nuclear Power	312.5	Utilities (Power & Water)
2016	UAE	DEWA Coal	2349.9	Utilities (Power & Water)
2016	Oman	Barka Independent Water	273.6	Utilities (Power & Water)
2016	Oman	Ibri Mega Gas Fired	663.3	Oil & Gas
2016	Oman	Liwa Plastics Plant	3800	Petrochemicals
2016	Oman	Sohar Mega Gas Fired	605.7	Oil & Gas
2016	Oman	Mazoon Petrogas SAOC	264.9	Oil & Gas
2016	Oman	Al Wusta Block 7 Oil Field	50	Oil & Gas
2016	Oman	Mina Petroleum LLC	49	Oil & Gas
2016	Oman	Sohar Independent Water	213.2	Utilities (Power & Water)
2016	Kuwait	Clean Fuels Scheme	3980	Oil & Gas
2016	Bahrain	Alum Bahrain Sixth Potline	1500.1	Mining
2016	Bahrain	Bahrain LNG Import Terminal	741.1	Oil & Gas
2017	Saudi Arabia	Ma'aden Alcoa Alumina Refinery	1780	Mining
2017	Saudi Arabia	Fadhili IPP	435	Utilities (Power & Water)
2017	Saudi Arabia	Shuaiba IWPP	275	Utilities (Power & Water)
2017	UAE	Sweihan Solar Photovoltaic	708	Utilities (Power & Water)
2017	UAE	Shuaa Energy 2 P.S.C.	655.2	Utilities (Power & Water)
2017	UAE	Paris Sorbonne University	236.8	Leisure & Property
2017	UAE	Fujairah Independent Water	891.8	Utilities (Power & Water)

2017	Oman	Salalah LPG	639.8	Oil & Gas
2017	Oman	Salalah Methanol Plant	728	Petrochemicals
2017	Bahrain	Alum Bahrain Sixth Potline	725.5	Mining
2018	Bahrain	Al Dur IWPP	1299.6	Utilities (Power & Water)
2018	Bahrain	Al-Ezzal Bahraini	243	Utilities (Power & Water)
2018	Saudi Arabia	Sakakah Solar PV Plant	222	Utilities (Power & Water)
2018	Saudi Arabia	Yanbu Linear Alkyl Benzene	870	Petrochemicals
2018	UAE	Sharjah WTE	163.2	
2018	Oman	Duqm Refinery	4608.9	Oil & Gas
2018	Oman	Al Asilah Desalination Co Saoc	111.6	Utilities (Power & Water)
2018	Oman	Salalah IWP	120	Utilities (Power & Water)
2018	Oman	Dune LNG Carrier SA	30	Transportation & Infrastructure

Appendix 4

Idle funds in the Syrian banking sector until the end of 2018 (SP bn)

Bank	Deposits	Reserve re-quirements	Lendable funds	Credit & loans	Financial assets	Idle funds
Commercial Bank of Syria	1,434.30	71.71	1362.58	631.50	0	731.08
Real Estate Bank	439.32	21.97	417.36	385.35	0	32.01
Agricultural Cooperative Bank	72.52	3.63	68.89	64.92	0	3.97
Saving Bank	277.65	13.88	263.77	239.78	0	23.99
Popular Credit Bank	171.98	8.60	163.38	137.81	0	25.57
Industrial Bank of Syria	64.23	3.21	61.02	57.64	0	3.38
Public banks	**2,460**	**123**	**2,337**	**1,517**	**0**	**820**
Fransabank	91.06	4.55	86.51	26.99	0	59.52
Audi Bank	91.47	4.57	86.90	11	0.05	75.85
Al-Sharq Bank	51.73	2.59	49.15	23.27	4.80	21.07
Qatar National Bank (QNB)	27.87	1.39	26.47	6.45	20.81	-0.78
Banque BEMO Saudi Fransi	254.13	12.71	241.42	76.59	1.73	163.10
Bank of Jordan	22.56	1.13	21.44	8.37	0	13.07
Bank of Syria and Overseas	138.50	6.93	131.58	9.32	0.19	122.07
Arab Bank	51.04	2.55	48.49	7.29	3.16	38.04
Byblos Bank	55.34	2.77	52.58	23.99	0	28.59
The International Bank for Trade & Finance	122.47	6.12	116.35	22.16	0	94.19
Syria Gulf Bank	44.84	2.24	42.60	6.65	0	35.95
Private banks	**951.02**	**47.55**	**903.47**	**222.09**	**30.73**	**650.66**
Syria International Islamic Bank	136.95	6.85	130.11	121.33	0.54	8.23
Cham Bank	82.19	4.11	78.08	47.98	2.52	27.58
Al-Baraka Bank	269.46	13.47	255.98	37.99	0.04	217.96
Islamic banks	**488.60**	**24.43**	**464.17**	**207.30**	**3.10**	**253.77**
Total	**3900**	**195**	**3705**	**1946**	**34**	**1724**

Appendix 5

Description of the components of the vectors, as well as the acceptable intervals for their change, given taking into account the quality requirements for the investment project

Vector component	Component description	Valid change intervals
	Government support characteristics for the investment project	
S_1	Government involvement in the provision of guarantees, score (1-10).	$S_{1min} \leq S_1 \leq S_{1max}$
S_2	Tax reduction, score (1-10).	$S_{2min} \leq S_2 \leq S_{2max}$
S_3	Incentives, score (1-10).	$S_{3min} \leq S_3 \leq S_{3max}$
S_4	Government control on the product price or service fee, score (1-10).	$S_{4min} \leq S_4 \leq S_{4max}$
S_5	Government support for raw material supply, score (1-10)	$S_{5min} \leq S_5 \leq S_{5max}$
	General characteristics of the investment project	
G_1	Location of the project, score (1-10).	$G_{1min} \leq G_1 \leq G_{1max}$
G_2	Design and planning, score (1-10).	$G_{2min} \leq G_2 \leq G_{2max}$
G_3	Technology, score (1-10).	$G_{3min} \leq G_3 \leq G_{3max}$
G_4	Project risk, score (1-10).	$G_{4min} \leq G_4 \leq G_{4max}$
G_5	Advertising and marketing, score (1-10)	$G_{5min} \leq G_5 \leq G_{5max}$
	Economic characteristics of the investment project	
E_1	The total amount of discounted costs associated with the project (project cost), SYP.	$E_{1min} \leq E_1 \leq E_{1max}$
E_2	Required initial investment, SYP.	$E_{2min} \leq E_2 \leq E_{2max}$
E_3	Taxes, SYP.	$E_{3min} \leq E_3 \leq E_{3max}$
E_4	Net Present Value (NPV), SYP.	$E_{4min} \leq E_4 \leq E_{4max}$
E_5	Profitability index (PI), SYP.	$E_{5min} \leq E_5 \leq E_{5max}$
E_6	Gross income, SYP.	$E_{6min} \leq E_6 \leq E_{6max}$
E_7	Net income, SYP.	$E_{7min} \leq E_7 \leq E_{7max}$
E_8	Internal Rate of Return (IRR), %.	$E_{8min} \leq E_8 \leq E_{8max}$
E_9	Accounting Rate of Return (ARR), %.	$E_{9min} \leq E_9 \leq E_{9max}$
E_{10}	Payback Period (PP), year.	$E_{10min} \leq E_{10} \leq E_{10max}$
E_{11}	Discounted Playback Period (DPP), year.	$E_{11min} \leq E_{11} \leq E_{11max}$
	Workplace characteristics of the investment project	
W_1	Correspondence of the human resources to the objectives of the investment project, score (1-10).	$W_{1min} \leq W_1 \leq W_{1max}$
W_2	Correspondence of the managerial culture to the objectives of the investment project (quality of managerial staff), score (1-10).	$W_{2min} \leq W_2 \leq W_{2max}$
W_3	Labour skills, score (1-10).	$W_{3min} \leq W_3 \leq W_{3max}$
W_4	Labour motivations, score (1-10).	$W_{4min} \leq W_4 \leq W_{4max}$
W_5	The percentage of local employee, %.	$W_{5min} \leq W_5 \leq W_{5max}$
	Characteristics of the product / service provided by the investment project	
P_1	Long-term demand for the product/service provided by the project, score (1-10).	$P_{1min} \leq P_1 \leq P_{1max}$

P_2	Availability of materials needed for the operation of the project, score (1-10).	$P_{2min} \leq P_2 \leq P_{2max}$
P_3	Correspondence of the product/service to the needs of the market, score (1-10).	$P_{3min} \leq P_3 \leq P_{3max}$
P_4	Social acceptability of the product/service provided by the project, score (1-10).	$P_{4min} \leq P_4 \leq P_{4max}$
	Indicators characterizing the monitoring system of the investment project implementation process	
I_1	The significance of the information provided during the implementation of the investment project, score (1-10).	$I_{1min} \leq I_1 \leq I_{1max}$
I_2	The completeness of the information provided during the implementation of the investment project, score (1-10).	$I_{2min} \leq I_2 \leq I_{2max}$
I_3	The reliability of the information provided during the implementation of the investment project, score (1-10).	$I_{3min} \leq I_3 \leq I_{3max}$
I_4	Timeliness of the information provided during the implementation of the investment project, score (1-10).	$I_{4min} \leq I_4 \leq I_{4max}$
I_5	Clarity of the information provided during the implementation of the investment project, score (1-10).	$I_{5min} \leq I_5 \leq I_{5max}$
I_6	Relevance of the information provided during the implementation of the investment project, score (1-10).	$I_{6min} \leq I_6 \leq I_{6max}$