OVERVIEW



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# Trends of Project Finance in the World Market and in Arab Countries

**M.K. Mohammadia**
Damascus University, Syria;
Saint-Petersburg State University, Saint-Petersburg, Russia
https://orcid.org/0000-0002-0601-226X

## ABSTRACT

Over the years, project finance has proved to be one of the innovative techniques in bridging the resource constraints faced by most governments in financing large developmental investments. In this regard, the current state and dynamics of indicators of the world project finance market, as well as the role and place of the Arab economy in this global phenomenon, are interesting. The **aim** of the article is to review the features of project financing in the world and in Arab countries, mainly in the GCC region. The article employed the **methods** of statistical analysis, regression modelling. The author analysed historical data on the volume, dynamics, and structure of project financing in the GCC countries. The study **revealed** the use of project finance in 18 Arab countries, primarily concentrated in three areas: energy and water supply, petrochemicals, and the oil and gas industry. The author **concluded** that there is a growing tendency to use Islamic project finance structure.

***Keywords:*** project finance; Islamic project finance; Gulf Cooperation Council (GCC)

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## INTRODUCTION

Project finance has over the years proved to be one of the innovative techniques in bridging the resource constraints faced by most governments in financing large developmental investments, it is an efficient way to fund capital-intensive and strategically important projects such as long-term infrastructure, industrial, or public services.

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 individual narrow aspects such as risk management, types of interaction schemes used between participants, contractual framework, and credit structure.

P. Nevitt [2] was one of the first authors who justified the concept of project financing, presenting the general theory of project financing. Many texts (S. Gatti, F. Fabozzi, A. Fight, M. Khan, R. Parra, M. Morrison) [3–7] contain detailed descriptions, analyses, and examples of project financing. The works by B. Esti [8, 9] are highly specialized and mainly devoted to risk analysis. While the materials published by international financial organizations, such as the World Bank [10], are mostly presented in the form of databases, which should be analyzed by the reader.

Kleimeier and Megginson [11] indicated that project finance is mainly used in infrastructure and the utilities sector, where it is easy to create project structures with clearly identified cash flow streams. Kleimeier and Versteeg [12] argued that project finance can offset the lack of institutional and financial development and it can be well adapted to the least developed countries. Based on empirical data analysis of data from 90 countries, they found that project finance was a powerful driver of economic growth in low-income countries.

The work by H. Davis [13] consists of 38 case studies of project financing covering energy, water, resources and infrastructure projects in a variety

of countries, which illustrate different aspects of project finance across the world.

Among the works devoted to project finance in Russia, it is necessary to note the works by I. Nikonova, A. Smirnov, G. Kalmykova, V. Kasatonov, D. Morozov, Eh. Fait, V. Fauzer, I. Rodionov, etc [14–19]. They examined the main features of project financing, presented practical examples of project financing in the CIS and abroad. The modern tools for managing risks arising from the implementation of large investment projects, and ways to minimize them are described.

Existing literature suggests many definitions of project finance. Triantis defines project finance as the art and skill of piecing together new business development elements, financial engineering techniques, and a web of contractual agreements to develop competitive projects and make the right decisions to raise funding for industrial or infrastructure projects on a limited/nonrecourse basis where lenders look to the cash flow for loan repayment and the project assets for collateral [20]. While 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 in which the providers of the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return of and the return on their equity invested in the project [21].

So, the principles of project finance can be summarized as [22]:

- The project usually relates to major infrastructure with a long construction period and long operating life. Therefore, the financing must also be for a 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' or 'gearing') — roughly speaking, project finance debt may cover 70–90% of the capital cost of a project.
- 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, and in projects involving public infrastructure they cannot be sold anyway.
- 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-finance debt. This is 'non-recourse' finance.

The synthesis and analysis of data on project financing is significantly complicated due to the difficulty of identifying compliance with the above characteristics. In fact, the only formalized source of information on a systematic basis is data on loans attracted for project purposes.

## THE DEVELOPMENT OF PROJECT FINANCING IN THE WORLD

The analysis of the state of the global market for project finance allows us to state that in recent years there has been a clear trend of growth in the use of this type of financing.

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The analysis of the volume dynamics of project finance transactions in the global market allows us to state that in recent years, the use of project finance has grown dramatically from $ 23.33 bn per annum in 1995 to reach a peak of $ 282.7 bn in 2018, financing around 11000 transactions in 158 countries, with a total amount of project finance raised between 1995 and 2018 amounting to $ 3771 bn. The USA with

*Table 1*

**Size and number of project finance transactions in 1995–2018**

| Year | Total loans ($ bn) | Annual change % | Number of transactions | Number of countries | Year | Total loans ($ bn) | Annual change % | Number of transactions | 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 calculations according to the PFI League Tables. URL: http://www.pfie.com/ (accessed on 05.12.2019).

$ 578.7 bn accounts for most project finance (followed by Australia $ 370.2 bn and the UK $ 313.3 bn).

The 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;
- a total of 4325 loans were granted to 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 the 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.

The 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;
- a total of 6262 loans were granted to finance projects;
- the average annual growth rate of financing was 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 energy sector has been the leading sector in applying project finance since 1995. It has accumulated at least 30%, reaching a maximum of 53.5% in 2017, except 1997, when the telecommunication sector took first place (27.6%) ahead of the

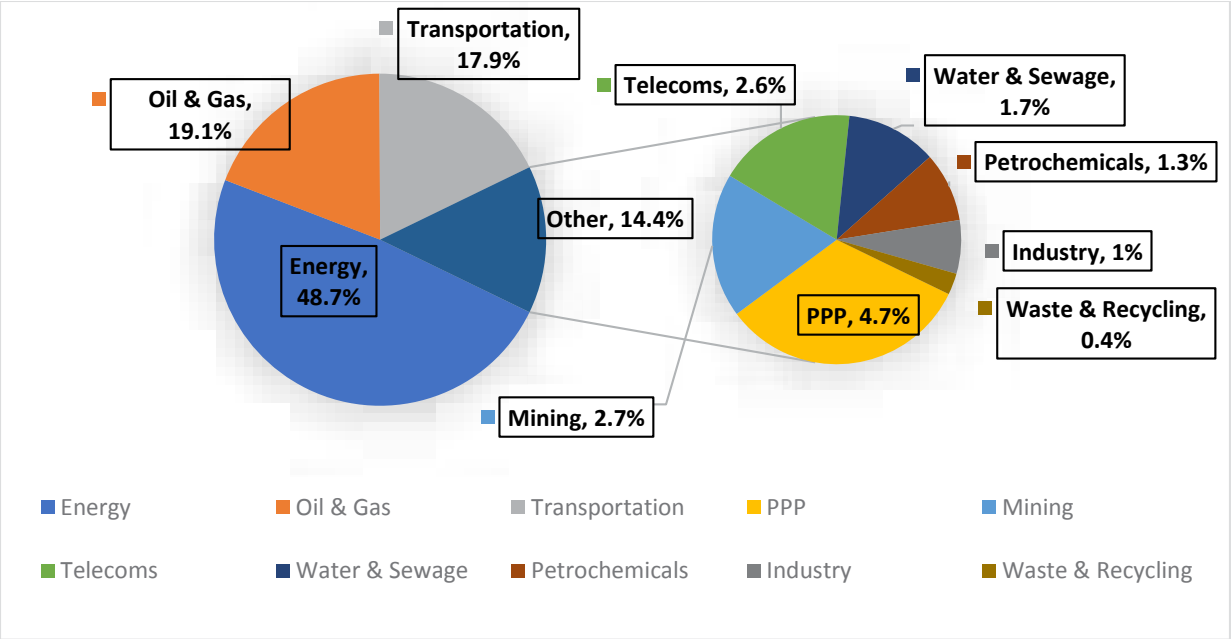


*Fig. 1.* **Sectoral structure of the global market for project finance in 2018**

*Source:* author's calculations according to the PFI League Tables. URL: http://www.pfie.com/ (accessed on 05.12.2019).

energy sector (24.9%). While in recent years, the oil and gas industry and the transport sector have shared the second place with an average value of 20% for both industries from 2009 to 2018.

In 2018, the main industries that used transactions involving project financing were the energy (48.7%, $ 137.63 bn), oil and gas (19.1%, $ 54.07 bn), and transport (17.9%) ones, as shown in *Fig. 1*. These fairly capital-intensive sectors form a significant part of the national infrastructure, have predictable sources of income, which makes them suitable for project financing [23].

On a regional basis, the distribution of the transactions by region is shown in *Fig. 2* for the period of 2007–2018. The market is divided into the Americas, EMEA (Europa, Middle East and Africa) and 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 particularly driven by infrastructure finance in India and the natural resources sector in Australia [24]. In 2011, India and Australia made up one-third of the project loans market. When the global financial crisis happened, the reduction in the volume of transactions in the European region and the Asia-Pacific region took the first place for the years from 2010 to 2012.

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

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 regression analysis.

By comparing the data on the volume of world GDP in *Table 2* and on the volume of project financing from *Table 1* in the period from 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 allow us to establish a relationship between the growth of project financing and global GDP.

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

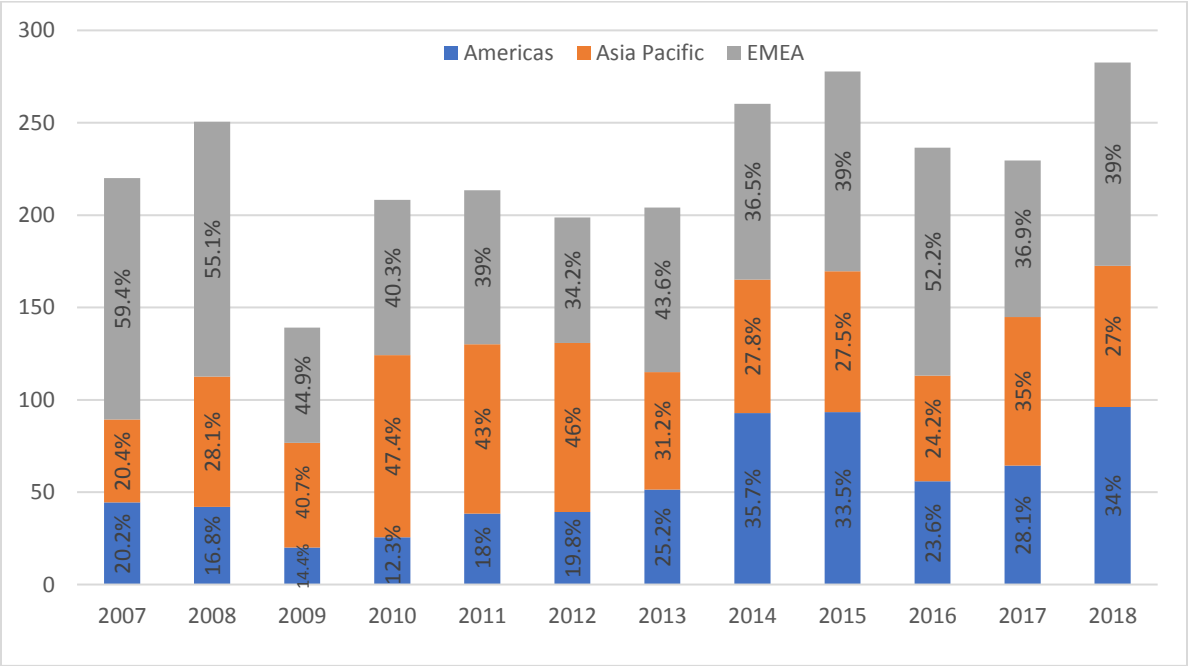


*Fig. 2.* **The distribution of project finance transactions by region for the period of 2007–2018 ($ bn)**

*Source:* author's calculations according to the PFI League Tables. URL: http://www.pfie.com/.

*Table 2*

**Global GDP from 2001 to 2018 ($ bn)**

| Year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|
| Global GDP | 33 396 | 34 674 | 38 902 | 43 817 | 47 457 | 51 448 | 57 968 | 63 612 | 60 334 |
| **Year** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** |
| Global GDP | 66 051 | 73 393 | 75 085 | 77 236 | 79 333 | 75 049 | 76 164 | 80 951 | 85 910 |

*Source:* World Bank data. URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD (accessed on 05.12.2019).

$y = a + b * x$, we used the built-in statistical function (linear), which allowed us to establish the value of coefficient b, coefficient a, determination coefficient $R^2$.

$$Y = 209 * X + 23508.$$

$R^2$ is 0.78, which is fairly good. It means that 91% of our values fit the regression analysis model.

## THE DEVELOPMENT OF PROJECT FINANCING IN THE ARAB WORLD

Arab countries are not the most developed markets considering the 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 rapidly growing population. There is still a huge need for infrastructure (including energy, water treatment and sewage) throughout the region.

*Table 3* illustrates the evolution in the volume of transactions carried out in all Arab countries from 1995 to 2018 and their share in the global volume. The project finance market boomed in 1996 and rose from virtually nothing to about $ 5 bn with 11.5% of the global market. Then, the

*Table 3*

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

| Year | Total loans (billion, $) | Total number of transactions | Share among all countries, % | Year | Total loans (billion, $) | 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 calculations according to the PFI League Tables. URL: http://www.pfie.com/ (accessed on 05.12.2019).

market stayed almost 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. The volume of transactions fluctuated significantly in the last decade dropping off to 9.13 bn in 2012 and peaking at $ 27.51 bn in 2016. *Fig. 3* lists the total volume of project finance for each Arabic country from 1995 to 2018.

Project financing is booming in Saudi Arabia, leading Arab countries to transactions. About 32% of the projects took place in the Kingdom of Saudi Arabia, the largest economy in the region with 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) account for 86% of the total Arabic project finance market.

*Fig. 4* shows the volume of transactions in the Gulf Cooperation Council (GCC) region in the last 16 years. The Gulf Cooperation Council (GCC) region comprises fast-growing economies with government revenues fuelled by sizeable 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 legisla-

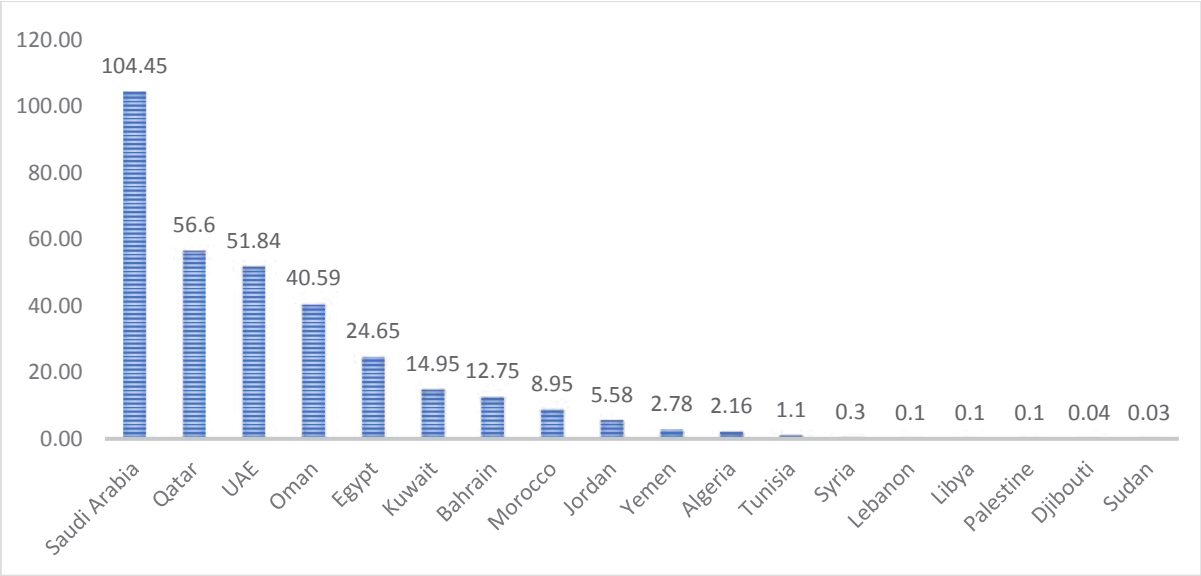


*Fig. 3.* **The total volume of project finance in each Arabic country from 1995 to 2018 ($ bn)**

*Source:* author's calculations according to the PFI League Tables. URL: http://www.pfie.com/ (accessed on 05.12.2019).

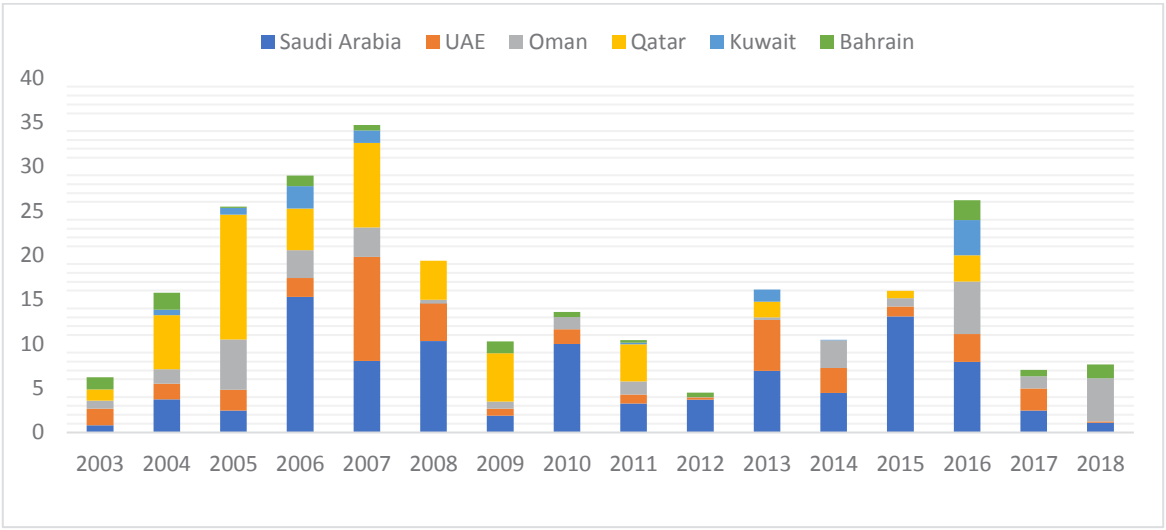


*Fig. 4.* **Project finance volumes in the GCC region since 2003 ($ bn)**

*Source:* author's calculations according to the PFI League Tables. URL: http://www.pfie.com/ (accessed on 05.12.2019).

tions that can influence on the capital structure of large investment projects. Except Oman, the GCC countries did not historically levy sizable corporate tax on locally owned domestic companies [25].

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 because of high oil prices. However, since 2008, due to the global financial crisis, European fiscal crisis and political and economic instability after the Arab Spring have led to a sharp reduction in the GCC project finance market. The governments throughout the region are investing in energy, petrochemicals, oil and gas, transport and other industries, as they face a growing population and the need to diversify economic activities.

The data in *Table 4* show that for the period of 1995–2018, 214 projects were implemented in the GCC region with a total value of $ 281 bn distributed between 11 industrial sectors, including: utilities (energy & water desalination and wastewater treatment), oil and gas production, petrochemicals, mining, transport and other industries.

*Table 4*

**Number of projects by industry and country from 1995 to 2018 (size in $ bn / number of financed projects)**

| Type of project | Saudi Arabia | Qatar | UAE | Oman | Kuwait | Bahrain | Total size and # of projects |
|---|---|---|---|---|---|---|---|
| Utilities (Energy & Water) | 21 082 / 16 | 8376 / 7 | 27 198 / 23 | 9437 / 18 | 2196 / 3 | 5245 / 6 | 73 534 / 73 |
| Petrochemicals | 48 056 / 26 | 7359 / 6 | 80 / 1 | 6948 / 7 | 7797 / 2 | 123 / 1 | 70 363 / 43 |
| Oil & Gas | 14 332 / 5 | 26 205 / 11 | 3371 / 7 | 19 521 / 14 | 4212 / 2 | 1591 / 2 | 69 232 / 41 |
| Mining | 15 136 / 7 | 3309 / 2 | 14 580 / 5 | 1545 / 1 | – | 5793 / 3 | 40 363 / 18 |
| Transport & Infrastructure | 2615 / 6 | 11 346 / 7 | 425 / 1 | 1033 / 5 | – | – | 15 419 / 19 |
| Telecoms | 2350 / 1 | – | 1800 / 2 | 220 / 1 | 750 / 1 | – | 5120 / 5 |
| Recreation & Real Estate | 300 / 1 | – | 3187 / 4 | 105 / 1 | – | – | 3592 / 6 |
| Agriculture & Forestry | 280 / 1 | – | 487 / 3 | 1782 / 1 | – | – | 2549 / 5 |
| Industry | 300 / 1 | – | 709 / 3 | – | – | – | 1009 / 4 |
| Total | 104 451 / 64 | 56 595 / 33 | 51 837 / 49 | 40 591 / 48 | 14 955 / 8 | 12 752 / 12 | 281 181 / 214 |

*Source:* author's calculations according to the PFI League Tables. URL: http://www.pfie.com/ (accessed on 05.12.2019).

The Gulf has been a particularly prolific source of project finance opportunities in both refining and petrochemicals due to cheap and abundant raw material. Over the past few decades, the industrial cities of Jubail and Yanbu in Saudi Arabia have developed into large manufacturing sites for petrochemicals and refined products. The investment 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 [24].

Project finance in Qatar had primarily been used in the area of oil and gas, energy and social infrastructure sectors. In 2012, Qatar's national gas companies (Qatargas and Rasgas) became the world's largest producer of LNG [26]. Qatargas operates 14 Liquefied Natural Gas (LNG) trains with a total annual production capacity of 77 million tonnes. The LNG industry in Qatar has been financed almost only by project finance. Project finance debt of about $ 14 bn has been successfully raised from a variety of sources for Qatargas and Rasgas. In addition, a host of international events, such as the FIFA 2022 World Cup, are increasing demand for infrastructure and facilities.

In the United Arab Emirates (UAE), project financing has been mainly concentrated in the energy and water sectors. Besides the energy and water sectors, there have been project financing in the heavy industries, including metallurgy. There have also been two PPP 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 complete, 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 [27]. Islamic project finance is basically the same as project finance — it is a financial technique that involves financing of the entire or partial capital needed to fund a project. However, Islamic project finance requires that the purpose of the project and the financial schemes are consistent with Sharia. For instance, investment objectives must not be related to gambling or sale of pork or spirits, which are prohibited by Sharia law. Also, financial schemes cannot involve interest-based lending, and cannot include unclear terms of contract. Islamic financial institutions therefore have to design their financial structure so that profit is generated from commissions and rental fees through actual trading, without collecting interest [28].

## CONCLUSIONS

In light of the above analysis, the world market reflects wide variations in the field of project financing. The article 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 to be 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, one can notice that project finance in the GCC region is witnessing a growing trend of using Islamic project finance structure.

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## ABOUT THE AUTHOR

***Mohammad Kamal Mohammadia*** — Associate Teacher, Damascus University, Damascus, Syria;
Master's student, Saint Petersburg State University, Saint Petersburg, Russia

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