

A Comparative Study of the International Construction Contract (FIDIC Red Book 1999) and the Domestic Contract in Egypt (the Administrative Law 182 for the year 2018)

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Abstract: This research aims to compare and contrast the Fédération Internationale des Ingénieurs-Conseils (FIDIC) Conditions of Contract for Construction designed by the Employer (1999 – The Red Book) and Administrative Law 182 for the year 2018 in Egypt, with a focus on variations, delay damages, delayed payments, delayed drawings or instructions, adjustment of prices, and dealing with exceptional circumstances such as COVID-19. By analyzing these critical issues, the research provides new insights into how contracts in these conditions can be better administered. The research methodology is based on a descriptive statistics approach, allowing readers to comprehend the conflicting clauses and/or articles of the aforementioned concerns. Overall, this research provides valuable contributions to the field of construction contracts and highlights the need for greater consistency and clarity in contract drafting and administration.

Keywords: Administrative Law, FIDIC, Balanced Risk-Sharing, Payments, Variations, Delayed Drawings Provisions, Delayed Payment Provisions, COVID-19.

I. INTRODUCTION

Egypt has been improving on contract administration and potential methods to create a type of contract that provides a balanced risk-sharing through the effective application of its stipulations [1]. Despite there is no standard/unified form of construction contract that is used in all the construction projects in Egypt [2], Grand Egyptian Museum III, the Borg El Arab Airport, the Cairo Metro Project, and all projects financed by the World Bank are only a few of the significant projects in Egypt that make use of FIDIC contracts [1]. For infrastructure projects in Egypt or Arab countries in general, FIDIC standard forms of contract are also utilized. Using FIDIC typically makes the tendering stage easier because contract administrators would be aware of their obligations under the contract based on the general conditions, and their main attention would be on the adjustments set forth in the particular conditions. This is the main reason for its rising demand [3].

FIDIC provides a number of useful recommendations that would offer a precise interpretation of its terms, eliminating disputes arising out of misunderstandings.

On the other hand, Administrative Law 182 for the year 2018 (as a replacement for Administrative Law 89 for the year 1998) is the governing law for construction projects engaging with Administration Authorities in Egypt. Some of the articles specified under Law 182 for the year 2018 adhere to the Public Order. By establishing general principles that would establish

legal equality, the Public Order addresses the laws and values created to preserve social and legal solidarity and unity among people [4]. As a result, judges strictly adhere to these principles and do not permit anything to interfere with their application.

Despite the general trend towards the usage of the standard forms of contracts, such as FIDIC, due to its relative balance sharing of risks; yet administration-related projects in Egypt shall be governed by Law 182 for the year 2018. This research proposes/suggests specific enhancement -from the perspective of risk sharing - to specific provisions of Law 182 for the year 2018. Such enhancement shall be carried out through a comparison study between Administrative Law 182 for the year 2018 and FIDIC 1999 Red Book.

The Administrative Law 182 for the year 2018 provisions originated from various sources of legislation (the constitution and laws). Hence, Administrative Law is more like the Common Law concept. Similarly, FIDIC was based primarily in its early editions on the Institution of Civil Engineers (ICE) conditions that were based on the English Common Law [5].

Below are illustrative figures (bar charts) that show the historical development of both FIDIC standard forms of contracts and Egyptian Laws.



Figure 1: Bar chart of the historical development of FIDIC standard forms of contract.

II. LITERATURE REVIEW



Figure 2: Bar chart of the historical development of Egyptian Laws.

The main aims of this section are to shed light on some of the previous observations of the critical provisions in the used contracts for construction projects.

A. For FIDIC Red Book 1999

FIDIC creates standardized civil engineering contract forms. In 1913, three nations founded it. For the construction of mechanical and electrical plants as well as civil engineering projects, FIDIC is renowned for generating Standard Forms of Contract. The first edition of the "Conditions of Contract for Works of Civil Engineering Construction", known as the "Red Book", was published in 1957. The group includes many contract forms that are widely used and have gained popularity around the world, particularly in the Middle East. After being approved and authorised by the Asian and Western Pacific Contractors' Associations International Federations, The Red Book's Second Edition was published in July 1969. FIDIC published "Notes on Documents for Civil Engineering Contracts," a compilation of notes on various Red Book Third Edition's clauses, in 1977 [6].

The 1999 collection of FIDIC contracts replaces the 1987 set, which is primarily distinguished by its colours. From 1987 to 1999, FIDIC acknowledged the necessity for a design and construction contract, leading to the 1995 creation of the Orange Book, which came to be known as the Orange Book. The Orange Book was no longer required once the 1999 set was released because a design and development contract could be satisfied by the Yellow Book or the Silver Book. The following four contract types are included in the 1999 set (1st Rainbow Suite): -

1. Conditions of Contract for Construction (First Edition, 1999) The Red Book,
2. Conditions of Contract for Plant and Design-Build (First Edition, 1999) The Yellow Book,
3. Conditions of Contract for EPC/Turnkey Projects (First Edition, 1999) The Silver Book,
4. Short Form of Contract (First Edition, 1999) The Green Book);

One of the most popular types of contracts is FIDIC; they have long been extensively utilized throughout the Middle East and North Africa region. The success of the FIDIC contract forms is due to their adaptability to various legal systems, their widespread use among market participants, including financiers, and their proactive updating to meet the needs of their target market. The new Cairo airport (Terminal Two), the Greater Cairo Wastewater Project, the third phase of the Grand Egyptian Museum, the Cairo Metro Project, and currently the fourth phase of the Metro have all used the FIDIC forms of contract extensively in Egypt [7]. Several FIDIC conferences were held in Egypt, including the one on dispute resolution in international construction contracts that was organized by FIDIC and the International Chamber of Commerce in 2005. [8]

In this paper, the researcher will focus his study on the Red Book version 1999 because of their high frequency of use in Egypt.

B. For Administrative Law 182 for the year 2018

In the civil law domain, a contract is an agreement reached by and between two or more persons to create, amend, settle, or terminate a legal relationship. Administrative law can be defined as the body of constitutional provisions, legislation, court rulings, executive orders, and other official directives that (a) govern the procedures used by public authorities in the adjudication, adoption, and implementation of policies, (b) regulate the exercise of their power to enforce laws and regulations, and (c) control the extent to which the administration is open to public scrutiny. Reviewing public authority judgments, deeds, directives, orders, regulations, policies, and other areas of their operations is also permitted by administrative law. In other words, administrative law is the legislation that governs how government agencies are organized. It governs the methods, justifications, and legal standing of public administrative agencies.

Public contracts or administrative contracts are agreements reached by the administration with the individuals to cooperate in the pursuit of a public purpose and are subject to the administrative system. A legal tool that some authorities, bodies, entities, and institutions of the public administration system use to carry out their responsibilities in enforcing the law to serve the public interest is known as an administrative contract. This contract works in conjunction with administrative law and regulations. These management records of the administration are governed by a unique legal framework. Unilateral administrative deeds and contracts, on the other hand, are bilateral legal documents. Both regulatory and conventional provisions are included in the administrative contract. The conventional provisions consist of conditions that the contracting parties have negotiated and agreed upon, whereas the regulatory provisions are legally binding clauses prescribed by law. If the administration decides to enter into administrative contracts, it truly choose to use its authority and sovereignty rather than just be a party to a contract [4]. In addition, many of the terms and conditions of administrative contracts are by their very nature non-negotiable. As a result, the administration never gives up the authority to include these conditions in the administrative contracts it enters into. [9].

The Public Contracts Law No. 182 of the year 2018 was published on October 3, 2018, following approval by the Egyptian Parliament. The law governs the contracts and agreements that Egypt's governmental authorities enter into and contains particular rules that they must abide by. Additionally, it replaces the Tenders and Auctions Law No. 89 of 1998. In order to address present and future needs of public authority and society, the Ministry of Finance has created a new law in support of economic and social reforms. [9]

III. RESEARCH METHODOLOGY

The research methodology for presenting this study has adopted a questionnaire survey to identify significant factors in comparing critical provisions between the FIDIC red book 1999 and Law 182 for the year 2018 in Egyptian construction projects. Literature reviews, books, conference proceedings, and discussions with practitioners of all parties involved in the construction industry were carried out to determine the primary goal of this research. Subject to the limited scope stated above, the research is conducted to determine the terms of the FIDIC red book 1999 contract compared to the relevant terms of Law 182, which implicitly contain risks in light of what will be inferred from the statistical analysis and the preliminary data itself.

The research involves an Inductive Approach, through semi-structured interviews and a questionnaire survey to gather information. The experts' response was very valuable and an addition to this paper's research through factors in a Likert Scale; for each factor, the respondents were asked to rate using a five-point scale of 1 to 5 was adopted. It is categorized as follows 5=very high; 4=high; 3=medium; 2=low; and 1=very low.

The questionnaires were distributed to owners, consultants, and contractors of the Egyptian construction industry. The respondents involved in the survey had several years of experience in handling various types of projects. After analyzing the responses, the researcher made recommendations to amend these clauses in order to provide balanced provisions that achieve the goal of this study. Then, considering the changes that have been observed, offer recommendations to the various industry participants.

Table 1: Years of Experience

(Total n=76)	n (%)
years of experience in the construction industry?	
0-5 years	19 (25.0)
5-10 years	14 (18.4)
10-20 years	23 (30.3)
>20 years	20 (26.3)
years of experience in the contracts field?	
0-5 years	26 (34.2)
5-10 years	23 (30.3%)
10-20 years	22 (28.9%)
>20 years	5 (6.6%)
the highest level of academic education completed.	
Bachelor's Degree	49 (64.5)
Doctor of Philosophy Degree	5 (6.6)
Master's degree	21 (27.6)
Postgraduate Diploma (PM)	1 (1.3)

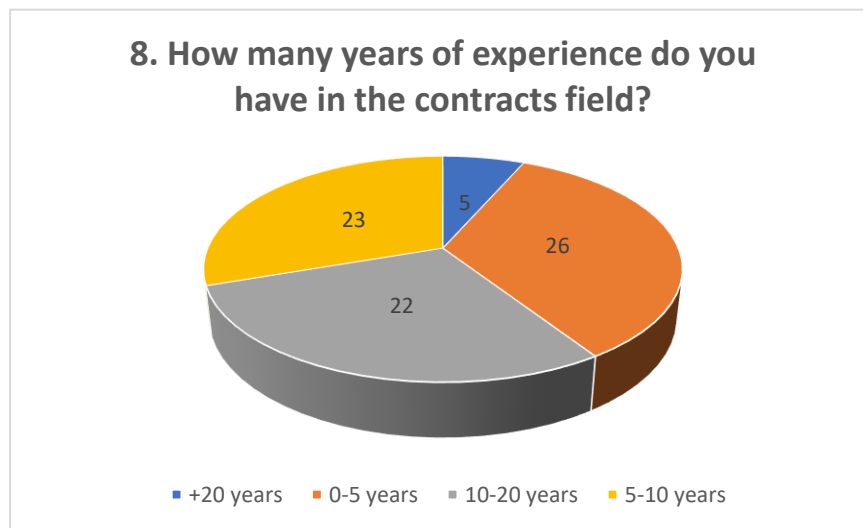


Figure 1: Pie chart showing years of experience

Before representing the comparison, the findings, and the recommendations; below is a table of the questions that were the technical core of the survey analysis (questionnaire) and an overview of the statistical analysis results and factors.

Table 2: The Questionnaire technical queries and the relevant statistical analysis factors

Questions	Cronbach's Alpha	Pearson Correlation	RII	FI	FAII
11- In consideration of "Liquidated Damages", should the Employer prove the actual losses/damages incurred as a result of the Contractor's delays?	.786	.664**	.566	.57	.32
12- In consideration of "Unliquidated Damages", should the Employer prove the actual losses/damages it incurred as a result of the Contractor's delays?	.790	.077	.864	.86	.75

13- Should the Employer be entitled to apply "Penalties" if it's likely to have losses?	.782	.489**	.568	.57	.32
14- Does the Employer's entitlement to Liquidated Damages shall be via Judicial Order?	.785	.561**	.452	.45	.21
15- Could the Liquidated Damages exceed a 10% of the Accepted Contract Amount?	.790	.462**	.544	.54	.3
16- In terms of Law 182 of the year 2018, is changing the As-Built quantities of specific item(s) rather than the BOQ constitute a Variation?	.780	.365**	.668	.67	.45
17- In terms of Law 182 of the year 2018, is changing the As-Built quantities of a specific item(s) by more than 25% of the BOQ for such item(s) constitute a Variation?	.782	.475**	.8	.80	.64
18- Further to the previous question, does the Competent Authority have to approve any change of quantities for a specific item(s)?	.779	.462**	.782	.78	.61
19. In terms of Law 182 of the year 2018, is the Scope of the permitted Variation Orders only limited to increase/decrease of item's quantity?	.774	.407**	.576	.58	.33
20- In terms of Law 182 of the year 2018, is the Administrative Body allowed to instruct the Contractor of Variation Order with alternative characteristics?	.787	.329**	.652	.65	.43
21- Does the lack of clarity in evaluating the Variations for additional works (i.e.: new items) negatively affect the contract administration with respect to Law 182 of the year 2018?	.778	.598**	.784	.78	.62
22- According to FIDIC 1999 Red Book terms and in your opinion, does Sub-Clause 12.3 [Evaluation] provides an accurate/fair methodology to evaluating an appropriate rate or price for the works?	.779	.287*	.792	.79	.63
23. In a remeasured contract, is changing quantity of item(s) for equal or more than 10% of the original item's quantity, shall be deemed substantial?	.777	.483**	.622	.62	.39
24- In a remeasured contract basis, is changing a quantity of an item(s) for equal or more that 25% of the item's quantity shall be deemed substantial?	.778	.616**	.76	.76	.58
25- Is the substantial changing in quantity of item(s) necessitate new rate to be agreed upon the parties?	.780	.445**	.714	.71	.51
26- Should the Contractor submit a pre-notification regarding instructions that he considers delayed and may negatively delay the project?	.781	.425**	.856	.86	.73
27- Is the Contractor waiving its right for entitlements by not submitting such pre-notification (of the previous question)?	.768	.661**	.616	.62	.38
28- Is the Contractor obliged to submit a notice entitled to financing charges as a result of delayed payments under FIDIC Red Book 1999?	.776	.688**	.616	.62	.38
29- Is the Contractor obliged to submit a notice entitled to financing charges as a result of delayed payments under Law 182 of the year 2018?	.774	.601**	.656	.66	.43
30- Does the FIDIC 1999 provide more balanced mechanism to reserve the Contractor's entitlements in case of delayed payments rather than which applicable under Law 182 of the year 2018?	.777	.398**	.8	.8	.64
31- In the light of releasing provisions of interim payments - according to Law 182 of the year 2018 in case of executing small projects-, is it reasonable to be 60-days?	.771	.514**	.466	.47	.22
32- In light of the releasing cycle provisions of an interim payment according to FIDIC 1999 Red Book, is 56 days cycle shall be considered reasonable?	.772	.528**	.682	.68	.47
33- In comparing the releasing cycle of an interim payment between FIDIC 1999 Red Book (56 days) and Law 182 of the year 2018 (60 days), is it worth to recommend the less period? In other	.775	.647**	.664	.66	.44

words, does the 4 days difference will be more beneficial to the Project?					
34- If the Engineer cease to certify interim payment(s), should it deemed to be considered a Contractor's risk in terms of Law 182?	.765	.723**	.614	.61	.38
35. If the Engineer cease to certify an interim payment(s), should it deemed to be considered a Contractor's risk in terms of FIDIC 1999 Red Book?	.768	.749**	.558	.56	.31
36- Should the Contractor be aware by the Engineer's certifying the interim payment, in terms of FIDIC 1999 Red Book?	.776	.492**	.844	.85	.71
37. Should the Contractor be aware by the Engineer's certifying the interim payment, in terms of Law 182?	.778	.535**	.666	.67	.44
38. In terms of Law 182 of the year 2018, does the COVID-19 Pandemic constitute a Force Majeure?	.779	.751**	.64	.64	.41
39. In terms of FIDIC Red Book 1999, does the outbreak of COVID-19 constitute a Force Majeure?	.775	.761**	.7	.7	.49
40- In terms of FIDIC Red Book 2017, does the outbreak of COVID-19 constitute a Force Majeure?	.776	.379**	.726	.73	.53
41- In terms of Law 182 of the year 2018, does it more suitable to allocate risk of changing the material costs, the currency exchange rates, inflation, and fluctuation, etc. to the Contractor? especially for long-period projects.	.768	.820**	.582	.58	.34
42. In terms of FIDIC Red Book 1999 and considering the Accepted Contract Amount, with respect to the Administrative Body's point-of-view, does it more suitable to allocate the risk of changing the material costs, the currency exchange rates, inflation, fluctuation, etc. to the Contractor? knowing that the project is relatively of a long period.	.772	.734**	.548	.55	.3
43. Does the formulae of price adjustment constitute an Employer/Administrative Body's risk?	.775	.491**	.726	.73	.53
44. Does the formulae of price adjustment could be considered a balanced-risk sharing between the parties?	.775	.467**	.774	.77	.6

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Also, a table showing the top 20 questions in terms of ranking such questions as per (Relative Importance Index, Frequency Index, and Frequency Adjusted Importance Index).

Table 3: Top 20 Questions of the questionnaire according to RII vs FI vs FAII

Rank	RII	FI	FAII
1	Q12	Q12	Q12
2	Q26	Q26	Q26
3	Q36	Q36	Q36
4	Q17	Q17	Q17
5	Q30	Q22	Q30
6	Q22	Q21	Q22
7	Q21	Q18	Q21
8	Q18	Q44	Q18
9	Q44	Q24	Q44
10	Q24	Q40	Q24
11	Q40	Q43	Q40
12	Q43	Q25	Q43
13	Q25	Q39	Q25
14	Q39	Q32	Q39
15	Q32	Q16	Q32
16	Q16	Q37	Q16
17	Q37	Q33	Q37
18	Q33	Q29	Q33
19	Q29	Q20	Q29
20	Q20	Q38	Q20

The subsequent sections address the six critical issues studied by the researcher, to show the conflicts faced between Administrative Law and FIDIC, and also provide recommendations.

IV. SELECTED CRITICAL PROVISIONS

It is not the intent of the current research to criticize both FIDIC 1999 Red Book or Administrative Law 182 for the year 2018 as to which provisions are better in applying; however, this section addresses the six critical issues studied to show the conflicts faced between FIDIC Red Book 1999 vs The Administrative Law 182 for the year 2018.

A. Delay Damages/Liquidated Damages

In FIDIC (1999), The Red Book, Delay Damages Sub-Clause 8.7 is one of the contract conditions that entitle the employer to legitimate remedies provided that the employer did not cause delays to the contractor.

The contractor should prepare and monitor an effective and efficient project plan to ensure the project is delivered on time and within budget as per the contract conditions. Supposing the contractor fails to meet the contractual time for completing the works. In such a case, the contractor should notify the employer and justify the reasons for the delay. So that an extension of time can be granted to complete the works or implement the design changes so that the works can be completed within the agreed time.

Unlike the Unliquidated damages, the delay damages are a contractual pre-agreed sum between the parties. It's deemed to recover the employer's losses in case of the contractor failed to complete the Works in the contractual Time for Completion (including the granted extension of time for completion, if any). Delay Damages are a pre-estimated sum; such stipulated sum for liquidated damages must be a careful and honest attempt to accurately calculate the loss or damage which will be suffered, and it must be a pre-estimate, i.e., it must be an estimate at the time the contract is made, not at the time of the breach [10]. Thus, the employer does not have to prove/substantiate the actual damages incurred. Delay Damages become due directly after the contractor breaches the contractual Time for Completion by not completing the Works on time for reasons solely attributable to him, even if the employer did not incur an actual loss as a result of such breach.

However, after the failure of the contractor to complete the Works on the contractual completion date, the employer shall submit a claim under Sub-Clause 2.5 [Employer's Claims] for the due Delay Damages which will be calculated for the elapsed time between the original and actual Time for Completion (the date that will be stated in the Taking-Over Certificate "TOC").

FIDIC stipulates that Delay Damages are the only due amounts to the employer concerning such breach by the contractor. Furthermore, the contractor cannot prevent the deduction of Delay Damages by submitting claims for an extension of time for completion. Yet, in case the employer was the responsible party for delaying the project and an EOT has been granted to the contractor via contractual determination, then the contractor shall be entitled to claim for the time associated costs related to the granted EOT which shall include the undue deducted Delay Damages.

In the Administrative Law, despite that the term "penalty" used in Law 89 of the year 1998 had been removed from Law 182 of the year 2018 and substituted by the term "damage" [11]; yet the concept that was borne by the Administrative Laws have not changed.

In comparing Delay Damages provisions between FIDIC 1999 Red Book and Law 182 for the year 2018, it was found that the provisions of Law 182 do not grant an Extension of Time for Completion via contractual determination of the contractor's entitlements that substantiated with particulars; it only grants a grace period as per Article 48 [Delayed Implementation of the Contract]. Such a grace period may be granted by the Competent Authority at its sole discretion.

The nonregulation of an EOT determination mechanism may negatively affect monitoring the progress and will leave the parties with the uncertainty of the revised completion date. Moreover, in such a comparison, the author found that Law 182 does not regulate provisions to grant the contractor any time-associated costs upon settling the said grace period.

The Proposed Modifications: -

The findings under this specific area of comparison can be outlined as follows: -

- Having a contractual mechanism concept to grant/determine an EOT to the contractor when the reasons of delaying the works are not attributable to him is essential; not just granting a grace period in the Competent Authority's sole discretion,
- Having an original/revised time for completion is essential to be able to set a reference/datum to calculate the due Delay Damages from,

- Also, in a balanced risk-sharing agreement, granting a time associated costs shall be properly regulated upon granting an EOT, if any,

The above findings necessitate the following proposed enhancements to Law 182 for the year 2018 (or its Executive Regulations) Liquidated Damages provisions: -

- Adjust the relevant provisions to enable the contractor to justify the delays encountered by the Project, whether attributable to the contractor or to the Administrative Body,
- Grant a mechanism to study/determine the contractual merit, compliance, and legitimacy of the contractor's submitted justification claim and its quantification measures to substantiate an entitlement to an EOT,
- If the contractor was entitled to an EOT, it is advisable to enforce the contractor to submit a revised programme to detect exactly the revised completion date of the whole works,
- Enable the contractor to substantiate its entitlement to time associated costs, if any, upon granting an EOT;

B. Delayed Payment Provisions

In FIDIC (1999) Red Book, Delayed/Late Payments Sub-Clauses affirm the concept that the employer is not entitled to withhold payments or set off against amounts certified in a payment certificate [12]. The payment timeline is shown in **Error! Reference source not found..**

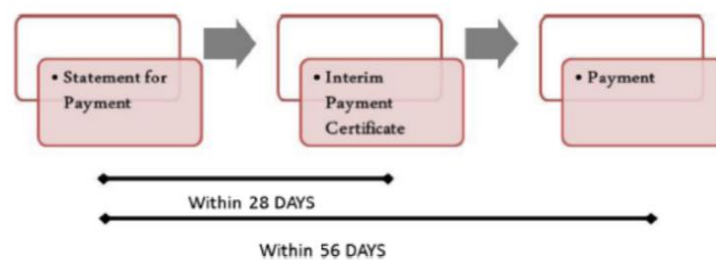


Figure 4: Payment timeline under FIDIC 1999 Red Book

As for the provisions of Law 182 for the year 2018 and its Executive Regulations the timeline of releasing due payment to the contractor is 60 days from the date of submitting the relevant invoice by the contractor.

Given that, it can be concluded that the provisions of both FIDIC 1999 red book and Law 182 for the year 2018 with respect to the payments' timeline are almost the same; yet, some differences will be shown hereunder. However, prior to illustrating the similarities/differences between the provisions of FIDIC 1999 Red Book vs those of Law 182 for the year 2018 relevant to delayed payments, first, this research will address most of the common problems that rise from delay in releasing payments that are due to the contractor by the employer.

For many years, issues with construction payments have raised grave concerns. In fact, a remarkable portion of disputes in the construction sector are based on payment-related issues. Disputes over payment concerns arise in construction projects in both emerging and established nations. Due to the severe impact on the downstream cash flow within the contractual supply chain, payment delays have an influence on the success of the industry as a whole. [1]

Delayed payments shall negatively affect the contractor's cash flow which will, consequently, lead to a further negative impact on the construction operations and activities. Hence, the employer shall not delay the contractor's due payment to maintain the stream of the project activities and prevent draining the contractor throughout the project duration.

Both FIDIC 1999 Red Book and Law 182 for the year 2018 have regulating provisions that remedy the contractor in case the employer has delayed its dues; such remedy can be concluded as granting the contractor financial charges as a compensation/indemnity for the duration of delaying the payment due.

The said financial charges can be described as interest amount for the duration of the delay in releasing the contractor's dues, and it can be calculated by referring to the discount rate of the central bank in both FIDIC 1999 Red Book and the Law 182 for the year 2018 with a slight difference as shown in the following table.

Table 4: Delayed Payment Provisions (FIDIC 1999 Red Book vs Law 182 for the year 2018)

Delayed Payments in FIDIC 1999 Red Book	Delayed Payment in Law 182 for the year 2018
Payment releasing time is 56 days from submitting the invoice	Payment releasing time is 60 days from submitting the invoice
Financial charges are the discount rate of central bank + 3 points (3%)	Financial charges are the discount rate of the central bank
The Payment certification process duration is indicated in the timeline of releasing the payment	The Payment certification process duration is not indicated in the timeline of releasing the payment

The Proposed Modifications: -

The findings under this specific area of comparison can be outlined as follows: -

- Cash flow stable stream is of an essence, since both FIDIC 1999 Red Book and Law 182 for the year 2018 have restricted the employer/Administrative Body from delaying the contractor's due payments,
- It's clear that both FIDIC 1999 Red Book and Law 182 for the year 2018 provisions of remedying the contractor are similar and adhere to almost same approach of compensating the contractor, which is granting the contractor financial charges,
- From Table 4 above, it can be concluded that FIDIC provisions relevant to delayed payments are more beneficial to the contractor than those of Law 182 for the year 2018 through various aspects such as less duration of releasing payments, increasing the discount rate of the central bank by 3 points, and identifying the certification process duration;

Based on the above, the following is recommended to enhance the application of the delayed payments remediation to the contractor as per Law 182 for the year 2018: -

- Indicate the payments' certification process duration in the payment releasing timeline provision, to keep the contractor aware, to some extent, about its payment status within the timeline of releasing such payment (60 days);

C. Delayed Drawings or Instructions

According to FIDIC 1999 Red Book, especially Sub-Clause 1.9 [Delayed Drawings or Instructions], the contractor shall notify the engineer when it's likely to encounter delays or disruption to its works (as a whole or as a part) as a result of not obtaining/having specific drawings and/or instructions on a specific time [13].

Such notification necessitates that the contractor shall be fully aware of its planned sequence of works, its forecasted procurement activities (especially of the long lead items), and its upcoming engineering works that will be due in near future, but the relevant design documents are not yet in place.

The mechanism of claiming an entitlement of an EOT due to delayed drawings or instructions according to such Sub-Clause necessitates that the contractor serves two notices, first, a notice of delayed drawings or instructions under the Sub-Clause at hand, which shall be considered a prerequisite of serving the second notice of claim under Sub-Clause 20.1 [Contractor's Claims]. In other words, the contractor shall prove that it has well-planned its activities; thus, it serves a notice to alert the engineer of a likely delay that may occur to the project in case a specific drawing(s) or instruction(s) is not issued on time.

On the other hand, Law 182 for the year 2018 does not specify an explicit approach that the contractor can pursue when intending to claim an extension of time for completion due to delayed drawings or instructions, but, and according to the experts, in the administrative contracts such case can be inferred to Article 48 of such Law and the impossibility of performance under the Egyptian Civil Code that not having/obtaining the necessary drawings or instructions on time that is necessary to enable the contractor to adhere to its sequence of works and achieve its planned procurement dates as per the approved schedule of works shall eventually delay the project.

The Proposed Modifications: -

The findings under this specific area of comparison are almost the same of which outlined/listed hereinabove under the previous section (4.1 Delay Damages Provisions). Hence, the following recommendations/proposed enhancements to Delayed Instructions provisions under Law 182 for the year 2018 (or its Executive Regulations) shall be deemed necessary:

-

- Adjust the relevant provisions to enable the contractor to justify the delays/disruption encountered by the Project, whether attributable to the contractor or the Administrative Body as a result of delaying specific drawings and/or instructions,
- Grant a mechanism to study/determine the contractual merit, compliance, and legitimacy of the contractor's submitted justification claim and its quantification measures to substantiate entitlement to an EOT,

D. Variations

According to FIDIC 1999 Red Book, especially Clause 13 [Variations and Adjustments], the employer has the right to vary the works in terms of different aspects, which are: -

- changes to the quantities of any item of work,
- changes to the quality and other characteristics of any item,
- changes to the levels, positions and/or dimensions of any part of the Works,
- omission of any work,
- any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work,
- changes to the sequence or timing of the execution of the Works;

As FIDIC 1999 Red Book has granted the employer the right to vary the works in terms of the above-stated aspects, it also grants the contractor to notify the engineer (with the supporting documents) of its inability to perform such a variation; provided that the contractor cannot readily obtain the needed Goods to duly perform such a variation.

In such context, it can be concluded that FIDIC Red Book 1999 has entitled the employer the right to vary the works either via increasing/decreasing the item's quantity, omitting any part of the works, adding new works, etc.; and also entitled the contractor to provide evidence of its inability to perform the instructed variation(s), if applicable.

On the other hand, Law 182 for the year 2018 has restricted the variations aspects to only changing the contract's volume, i.e., increasing/decreasing the quantities of an item of the works (as per Article 46) without changing the specifications, the quality, the sequence of work, levels, or adding new items. Furthermore, Law 182 for the year 2018 did not grant the contractor the entitlement of notifying the administrative body of the contractor's inability of performing the required variation. It's worthwhile to note that the obsoleted version of Administrative Law (Law 89 for the year 1998) had specified another aspect of variation types, which was adding new items if necessary [11]. Not to mention that Article 46 at hand had limited the percentage of change in the items' quantity to be 25% maximum.

The Proposed Modifications: -

The findings under this specific area of comparison can be outlined as follows: -

- Having a contractual mechanism concept to grant/entitle the employer the right to add/omit item(s) of the works, change the sequence/timing of executing the works, changing the specifications/quality of the item(s) is essential; not just changing the contract volume by increasing/decreasing the items' quantities,
- Also, entitling the contractor to notify about its inability to perform the variation(s) substantiated with the necessary supporting particulars is a necessary contractual mechanism to be available,
- The limited percentage of changing the quantity of an item is a restriction to the administrative body's power to vary,
- Another restriction to the administrative body's right to vary is that it shall obtain the Competent Authority's approval on the changes;

The above findings shall necessitate the following recommendations/proposed enhancements to Law 182 (or its Executive Regulations) for the year 2018 Variations provisions: -

- Entitle the administrative body to more options for changes/variations that it has the right to instruct,
- Grant a mechanism that enables the contractor to notify the administrative body of the contractor's inability to perform the requested variations subject to that this notification is properly substantiated and supported with the necessary particulars that prove the contractor's claim; yet, the administrative body shall still have the power to instruct the contractor to perform the variation in question anyway,

- Entitle the administrative body to change the quantities of an item without being restricted by a defined percentage,
- Elaborate on which the case that shall need obtaining the approval of the Competent Authority or the council of ministries, as it shall be considered a disruption if each and every change shall obtain such approval prior to instruct it by the administrative body and execute it by the contractor;

E. Adjustment of Prices

Sub-Clause 13.8 of the FIDIC 1999 Red Book, [Adjustments for Changes in Costs], outlines the process for adjusting the contract price in the event of changes to the cost of labour, materials, or equipment. According to Sub-Clause 13.8, if there is a change in the cost of labour, materials, or equipment that occurs after the contract price has been determined, the Contractor must notify the Employer of the change [14]. The Employer is then entitled to adjust the contract price, to consider the costs change, thru a formula of $[P_n = a + (b * L_n/L_o) + (c * E_n/E_o) + (d * M_n/M_o) + \dots]$.

This Sub-Clause states that the contract price adjustment shall be made only if the Contract between the parties includes the “Table of Adjustment Data”, such table shows the variable items, the weightings coefficients, and the nonadjustable portion of the Contract; as follows: -

- The non-adjustable portion (“a” in the formula above) shall be stated in an amount or a percentage of the Contract Price,
- Weightings coefficients to represent the proportion of the cost elements (“b, c, d, etc.” as indicated by the Contractor in its tender based on its experience and lesson learned of similar projects),
- The Variable items that the parties consider necessary to adjust the costs of such periodically during the execution of the Works, such as labourers, cement, diesel, reinforcement, aluminium, bitumen, US dollars, equipment, etc.,
- The base rates of the items stated in the previous point, i.e., the rate/cost of such items at the tender stage period (L_o , E_o , M_o , etc.),
- The current rates of the items, i.e., the rate/cost of such items at the period of adjusting the prices (L_n , E_n , M_n , etc.),
- The overall multiplier that is used periodically (as agreed between the parties) to adjust the contract price (P_n);

FIDIC Red Book 1999 has stipulated that such a table shall have existed in the Contract (thru the Particular Conditions agreed between the Parties to the Contract) to be able to apply the provisions of such Sub-Clause. Thus, the adjustment shall be made by addition to or deduction from the contract price, as appropriate.

In summary, Sub-Clause 13.8 of the FIDIC 1999 Red Book deals with adjustments to the contract price due to changes in labourers, materials, currencies, or equipment costs.

On the other hand, Law 182 for the year 2018, stipulates that the Contracts of a period of more than six months shall be amended according to the prices fluctuation, in light of the Producer Price Index issued by the Central Agency for Public Mobilization and Statistics (CAPMAS). Although that Law 182 and its Executive Regulations have paid considerable attention to such matter of adjusting the prices due to the changes in costs, yet, there are specific highlights that may be considered as shortfalls that may negatively affect the application of such provisions, as follows:

- Neither Law 182 provisions nor its Executive Regulations have mentioned the formula that shall be used in applying the periodical adjustment of prices, despite that a formula for applying such provisions had been stated in Law 89 for the year 1998,
- Law 182 (and its Executive Regulations) did not mention the amount of variable items [9],
- Law 182 did not explicitly make the Competent Authority and/or the Administrative Body responsible for determining the weightings coefficients; which may lead the Contractor to determine exaggerated coefficients [9];

The Proposed Modifications: -

The findings under this specific area of comparison can be outlined as follows: -

- FIDIC did not explicitly refer to the period that shall the parties adjust the prices upon,
- FIDIC did not make the application of the prices adjustments conditional/dependent on the minimum duration of the project,

- The unavailability of an accurate/agreed mechanism to determine the variable items amounts and the weighting coefficients may lead to a dispute between the parties under Law 182 for the year 2018;

The above findings shall necessitate the following recommendations/proposed enhancements to Law 182 (or its Executive Regulations) for the year 2018 Adjustment of Prices provisions: -

- Explicit statement of the formula that shall be used in adjusting the prices,
- Grant an approach of agreeing on the adjustment data prior the commencement of the project execution, such as the table of adjustment data of FIDIC 1999 Red Book to ensure identifying a list of variable items and the nonadjustable portion,
- Entitle the Competent Authority and/or the Administrative Body to determine reasonably the range of weighting coefficients and agree with the Contractor on the appropriate coefficient from such a range due to the nature of the works [9];

F. Exceptional Events (COVID-19)

According to FIDIC 1999 Red Book, COVID-19 can be classified and addressed under several scenarios, as there are a significant range of FIDIC contractual provisions that are relevant and can be referred to in the COVID-19 situation [15]. For instance the provisions of (HSE, Changes in Laws, Force Majeure, Exceptional Events, Unforeseeable shortages in personnel and in the supply chain, Delays caused by Authorities, Variations, Claims/Disputes).

As for Sub-Clause 8.4 [Extension of Time for Completion], especially point (d), it can be concluded that in case COVID-19 has caused a shortage in personnel or Goods, it can be considered as a solid ground for claiming an EOT for the Contractor, as the Contractor may experience negative consequences on its supply chain process and procurement works due to COVID-19 [15], [16]. In terms of HSE regulations and measures, and in case the relevant authorities decided to make an on-repeat HSE inspection on Site, thus, according to Sub-Clause 8.5 [Delays caused by Authorities] the Contractor may be entitled to an EOT due to disrupting its progress of work on Site [15].

FIDIC has considered further scenarios that may entitle the Contractor to a specific sort of remedies, especially when the authorities promulgate changes in the governing Laws, either by restricting the works' progress or by issuing a decree to prevent/ban the works at all. In such situations, and after investing the resulted impacts, the Contractor may consider the provisions under several Sub-Clauses, such as 13.7 [Adjustments for Changes in Legislation], 19.1 [Definition of Force Majeure]. The Contractor shall support its claims with the necessary particulars that show whether the Contractor is completely prevented from proceeding with its obligations due to such decree, or it is being onerous to perform; it's worth mentioning that the Contractor is likely to be entitled to additional costs under Sub-Clause 13.7 more than the other provisions listed above [15].

As for Law 182 for the year 2018, according to Article 48 [Delayed Implementation of the Contract], the Competent Authority has the capacity to grant a Grace Period to the Contractor if the delay occurred to the Contract is beyond the Contractor's control [9], [11]; therefore, a committee has been established to assess the circumstances of COVID-19 on the administrative contracts on 26th August 2020 and concluded that the provisions of the said Article of granting time extension shall apply.

Hence, the committee have decided through its decision number "106" to extend the construction works -that don't include MEP works- with 80 days maximum, and to extend those which include MEP works with 114 days [17].

The Proposed Modifications: -

The findings under this specific area of comparison can be outlined as follows: -

- Neither FIDIC 1999 Red Book nor Law 182 for year 2018 did explicitly consider COVID-19 as a force majeure event; however, FIDIC considered it as such when and only when there's a complete banning of the construction activities on Site by the authorities,
- Neither FIDIC 1999 Red Book nor Law 182 for year 2018 did explicitly refer to additional payments compensation due to COVID-19; however, FIDIC considered the entitlement to such remedy in case that the Contractor faced negative impacts due to changes in legislation under Sub-Clause 13.7
- Both FIDIC and Law 182 did not properly address the extent of negative effects on the procurement works and supply chain [16];

The above findings shall necessitate the following recommendations/proposed enhancements to Law 182 (or its Executive Regulations) for the year 2018 COVID-19 Event provisions: -

- Studying the HSE effect of such an event under Law 182 for the year 2018 provisions, as such aspect may cause adverse impact such as disrupting the works on Site,
- Classify the area under which the Competent Authority and/or the Administrative Body shall assess the consequences of COVID-19, to be able to further detect, as accurately as possible, the Contractor's entitlement(s); not by only granting the Contractor a grace period of 80 or 114 days as detailed above;

V. CONCLUSION AND RECOMMENDATIONS

Despite the recommended enhancement stated above in a specific manner under each one of the said six issues, hereunder are generic recommendations that can be concluded upon studying such research; moreover, it can be looked for further enhancements in future research(es).

1. The Grace Period (Time Limit) that permissible under Law 182 for the year 2018 can lead the project into a time at large completion; thus, it shall be determined as a defined extension of time for completion with a revised completion date to be able to properly monitor the progress on site.
2. The Contractor shall serve a notice when expecting delays as a result of belated/delayed instruction; it can be considered as a gesture of goodwill from the Contractor's side to preserve the project from encountering avoidable delays.
3. The Competent Authority shall grant itself, along with the Administrative Body, the right to vary the works through numerous ways, not only changing the quantities of an item(s).
4. Law 182 for the year 2018 shall explicitly refer to the formula used for the adjustment of prices, such as the one used in Law 89 for the year 1998.
5. A mechanism of studying the effect of a pandemic, such as COVID-19, on the supply chain and the procurement works shall be addressed on the provisions of Law 182 for the year 2018.

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