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Analyzing the Potential Hazards Associated with the New Iranian Petroleum Contracts (IPC) from NIOC's Perspective

Mehdi Piri[1*] and Hossein Darboui[2]

[1] Assistant Professor of International Energy Law, Faculty of Law and Political Science, University of Tehran, Tehran, Iran

[2] Ph.D. Candidate, Department of Law, University of Tehran-Kish International Campus, Iran

Highlights

- In-depth Analysis of IPC Hazards: This study critically examines the potential risks associated with Iranian Petroleum Contracts (IPC) from the perspective of the National Iranian Oil Company (NIOC), identifying key areas of legal and operational vulnerability.
- Legal and Economic Risk Factors: The key hazards identified include contractual ambiguities, financial uncertainties, and regulatory challenges that may impact Iran's oil and gas sector and its attractiveness to international investors.
- Recommendations for Contractual Stability: The study presents strategic recommendations aimed at strengthening IPC frameworks, mitigating risks, and improving NIOC's negotiation position in future agreements.
- Contribution to Oil and Gas Law Scholarship: This work enhances the understanding of petroleum contract frameworks within complex geopolitical environments, making it highly relevant for scholars and practitioners in oil and gas law, contract negotiation, and international arbitration.

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Abstract

Iran's latest risk service contract, known as the Iran Petroleum Contract (IPC), has been introduced to the international upstream market with the aim of attracting foreign investment in the country's oil and gas sector. Several terms and conditions distinguish the IPC from the previous Iranian upstream oil and gas agreement, the buyback Contract. The objective of this investigation is to examine the legal implications of signing contracts in Iran, as well as the contractual terms and conditions of a signed contract in the Cheshmeh Khosh field. This study not only provides a comparative analysis of the key provisions of IPC and buyback oil contracts, but also offers valuable insights into the potential hazards associated with both contractual frameworks from the perspective of the National Iranian Oil Company (NIOC), using realistic information and qualitative methods such as library and documentary research. Furthermore, it is designed to assist the NIOC in effectively responding to and monitoring these hazards, thereby promoting investment in the development of Iran's oil and gas initiatives while protecting the national interests of Iran.

Keywords: Oil and gas contracts, IPC, Buyback contract, hazard, Capital cost, Cost of money, Remuneration.

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[*] Corresponding author:
Email: Mehdi.piri@ut.ac.ir

1. Introduction

In host countries with substantial oil and gas reserves, the development of these resources is often hindered by the lack of modern technology, expertise, and financing. To overcome these challenges, such countries must enter into contracts with foreign investors. For example, Iran's significant hydrocarbon reserves make it an attractive destination for international investors who can provide capital, advanced technology, specialized knowledge, and qualified labor. The primary holders of natural gas reserves as of the end of 2019 were Russia (38 TCM), Iran (32 TCM), and Qatar (24.7 TCM) (Petroleum 2019; Sharma and Pareek 2020). By 2020, Iran accounted for 6.1% of global natural gas production per billion cubic meters, ranking third worldwide (Petroleum 2019; Sharma and Pareek 2020). Venezuela, Saudi Arabia, Canada, and Iran are the top four countries in terms of proven oil reserves, representing 17.5%, 17.2%, 9.8%, and 9% of global reserves, respectively (Petroleum 2019; Sharma and Pareek 2020). However, investment risks for foreign oil companies have increased due to sanctions imposed by the United States and other Western nations on Iran's energy sector. To mitigate these risks, Iran has revised its two-decade-old petroleum contract structure known as the buyback Contract. The IPC is the fourth generation of the buyback Contract and is fundamentally a service contract. Figure 1 provides a comprehensive overview of upstream oil and gas contracts on a global scale.

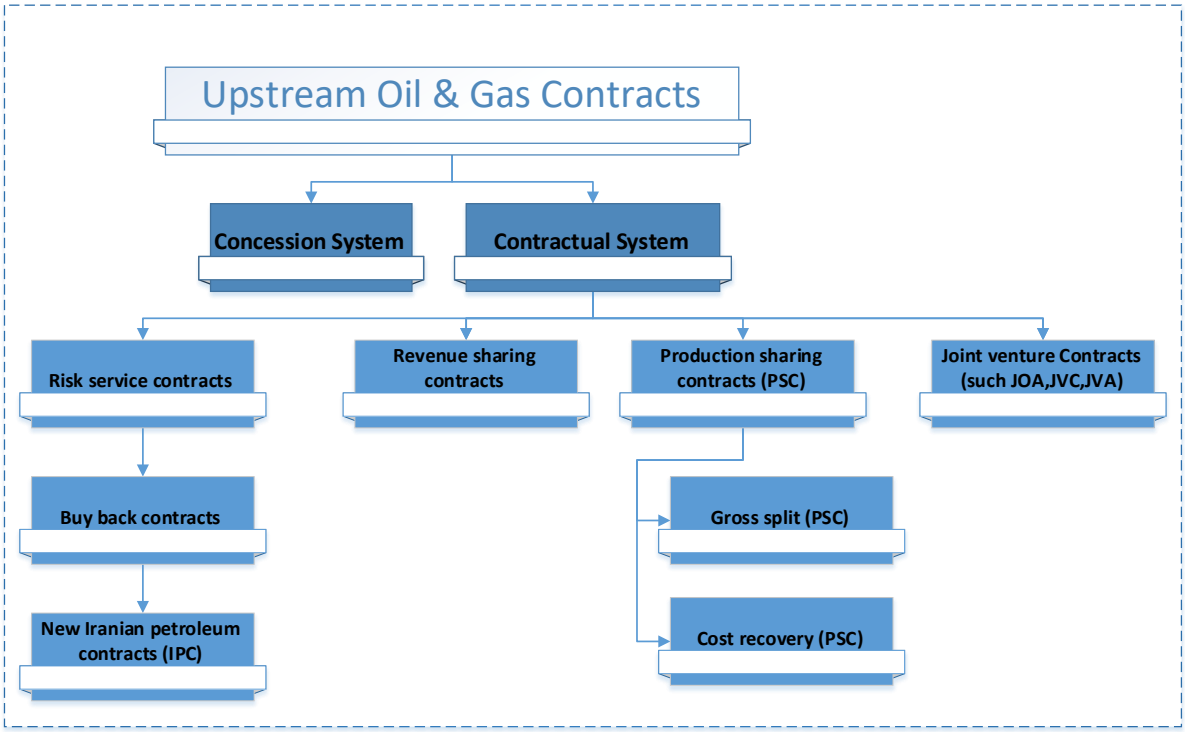

Figure 1

Oil and gas upstream contracts

The IPC has been specifically developed to attract foreign investment in Iran's oil and gas industry by offering contractual terms that differ significantly from those of buyback Contracts. This research focuses on the terms and conditions of the IPC signed between NIOC and a foreign contractor for the Cheshmeh Khosh oil field, and it compares these key terms and conditions with those of the buyback Contract signed for the Yadavaran oil field. Numerous studies have examined IPCs and buyback Contracts (Shahri 2010; Shahri 2015; Sahebhonar, TaheriFard et al. 2016; Asgharian 2017; Ghandi and Lawell 2017; Li, Jiang et al. 2017; Maddahinasab 2017; Soleimani and Tavakolian 2017; Farrokhi and

Abaeian 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Farimani, Mu et al. 2020; Molasadeqi and Noruzi 2021; Behdadnia and Ziyaee 2022; Bahmaei and Afshar 2024; Tavakkoli Mohammadi, Eshaghzade et al. 2024; Bahmaei and Afshar 2025). However, despite these contributions, no study has yet provided a comprehensive and detailed analysis of the comparative legal and contractual aspects of these frameworks, nor have they explored the potential hazards they may present from NIOC's perspective.

This paper, titled "Analyzing the Potential Hazards Associated with the New Iranian Petroleum Contracts (IPC) from NIOC's Perspective," aims to address this gap. It first provides an in-depth comparative analysis of the key features of IPC and buyback Contracts to clarify their core principles and distinctions. It then evaluates their provisions in the context of Iranian laws and regulations. Finally, this study identifies and analyzes the hazard events inherent in these two contractual frameworks from NIOC's viewpoint, proposing measures that safeguard national interests.

By presenting a detailed examination of these critical issues, this paper contributes meaningfully to the body of knowledge on IPCs and offers a valuable reference for national and international contractors seeking collaboration with NIOC. At the same time, it strengthens NIOC's capability to anticipate and mitigate contractual risks, thereby ensuring more effective protection of Iran's national interests.

2. Contractual ground

Oil contracts are generally governed by the legal systems and regulatory frameworks of each country. In some jurisdictions, various models of oil contracts have been implemented, whereas in others, contractual structures have evolved through modifications of earlier frameworks. Within the Iranian legal system, buyback Contracts have long served as the predominant contractual model for oil field development. However, the growing need for advanced technology and investment, particularly in enhanced oil recovery, led to the introduction of the Iran Petroleum Contract (IPC). Some scholars regard this new model as the fourth generation of buyback Contracts. Since neither IPC nor buyback Contracts have been officially published, a precise examination of their provisions is not feasible. Therefore, in order to identify their similarities and differences, the following analysis is based on the contractual frameworks of two executed agreements.

Although both buyback Contracts and IPCs are risk service contracts in which the contractor has no ownership rights over the oil in the reservoir or the produced hydrocarbons at the wellhead, and in both models, the contractor is remunerated in cash or in kind according to an oil sales agreement attached to the main contract under ring-fencing principles, there are also notable distinctions between the two. One of the most significant differences lies in the IPC model's inclusion of both development and production phases, whereas buyback Contracts primarily focus on development.

The following represent key characteristics, including similarities and distinctions, between the signed IPC contract for the Cheshmeh Khosh oil field and the signed buyback Contract for the Yadavaran oil field:

The buyback Contract is short-term and typically has a maximum duration of 9 years, including extensions. In contrast, the IPC is structured as a long-term agreement with a duration ranging from 20 to 30 years, with the option for extension. For example, the initial term of the Cheshmeh Khosh contract is 10 years, with an additional 10-year extension available under mutually agreed terms between NIOC and the contractor.

Under the IPC framework, the contractor does not possess exclusive or priority rights to natural resources within the contract area, nor to hydrocarbons produced within or outside that area, unlike in

license or production sharing contracts. Nevertheless, the contractor is obligated to provide all necessary machinery, equipment, materials, technical know-how and know-why, qualified personnel, capital, and financing to conduct petroleum operations according to internationally accepted industry standards, similar to buyback Contracts and other service-based agreements (Asgharian 2017; Farrokhi and Abaeian 2018; Ghorbani 2020; Hasanalizadeh, Zare et al. 2023; Bahmaei and Afshar 2024; Bahmaei and Afshar 2025). Once a commercial field is confirmed, the contractor will be compensated either in cash or in kind under a separate long-term sales agreement, or through a combination of both (Hadavimoghaddam and Mostajeran Gortani 2019; Hasanalizadeh, Zare et al. 2023; Bahmaei and Afshar 2025).

Furthermore, in the IPC, approved costs are recoverable even after the contract term expires, since the contract is automatically extended for cost-recovery purposes. Conversely, under a buyback contract, no costs are reimbursed beyond the contractual period (Tavakkoli Mohammadi, Eshaghzade et al. 2024; Bahmaei and Afshar 2025). Therefore, similar to buyback contracts, contractors under IPC remain responsible for risks associated with non-commerciality of the field, insufficient production during the contract term, and inadequate revenue generation to cover petroleum costs and contractor fees (Kakhki 2008; Asgharian 2017).

In the IPC, the contractor is required to submit a performance guarantee acceptable to NIOC prior to the contract becoming effective, similar to many executed buyback contracts. This guarantee may take the form of a parent company guarantee or other security instruments approved by NIOC. Failure to provide such a guarantee results in the contract becoming ineffective.

Under the IPC, the contractor is obligated to carry out petroleum operations on behalf of NIOC in accordance with the contractual provisions, the Development and Production Operation Plan (DPOP), and the annually approved work program and budget. Throughout the contract term, the contractor remains accountable to NIOC. In comparison, under a buyback contract, the contractor is responsible for performing exploration and development operations in exploration and development contracts, or solely development operations in pure development contracts. All operations must be executed on behalf of NIOC and in strict accordance with the contract terms, the Master Development Plan (MDP), and the annual work program and budget, with continued accountability to NIOC (Kakhki 2008; Ghorbani 2020; Molasadeqi and Noruzi 2021; Behdadnia and Ziyaee 2022; Bahmaei and Afshar 2025).

Financing under IPC, similar to the buyback structure, is based on a project-finance model. The contractor is able to recover only its approved costs and remuneration from the gross revenues generated from the same contract area, in accordance with the ring-fencing principle (Shahri 2015; Farimani, Mu et al. 2020; Behdadnia and Ziyaee 2022). Under the IPC framework, petroleum operations must be conducted to achieve the Final Target Production (FTP) defined in the contract. For instance, the contractor may be required to produce at least 12,000 barrels of crude oil per day for a minimum of 14 days within a continuous 20-day period. Cost recovery and contractor remuneration begin once the FTP has been achieved, using revenue exclusively from the same field (Sahebhonar, TaheriFard et al. 2016; Maddahinasab 2017; Hadavimoghaddam and Mostajeran Gortani 2019; Ghorbani 2020; GholamiGhadi and Ebrahimi 2023; Hasanalizadeh, Zare et al. 2023; Bahmaei and Afshar 2024; Tavakkoli Mohammadi, Eshaghzade et al. 2024).

In petroleum buyback contracts, the contractor may recover costs only after reaching the agreed-upon final production point. No payments are made prior to the achievement of this contractual milestone. If the contractor fails to reach the agreed production level, no reimbursement of costs or fees will occur (Sahebhonar, TaheriFard et al. 2016; Ebrahimi and Shahmoradi 2017; Maddahinasab 2017; Molasadeqi and Noruzi 2021; Behdadnia and Ziyaee 2022; GholamiGhadi and Ebrahimi 2023; Bahmaei and Afshar

2025). As per Paragraph 2, Article 6 of the General Conditions of the Upstream Oil and Gas Contract approved by Iran's Ministry of Petroleum in 2016, NIOC is generally not required to reimburse petroleum costs using products from other fields. However, this Clause allows NIOC to settle contractor costs and fees using products or components from other operations when required by the domestic market, enabling a structured exchange arrangement (Asgharian 2017; Behdadnia and Ziyaee 2022).

Similar to the buyback model, the IPC requires the International Oil Company (IOC) to establish a form of cooperation with an Iranian partner company authorized by NIOC (Maddahinasab 2017; Behdadnia and Ziyaee 2022; Tavakkoli Mohammadi, Eshaghzade et al. 2024; Bahmaei and Afshar 2025). This cooperation is formalized through a Joint Operating Agreement (JOA) for the purpose of exploration and development of petroleum resources. The IOC acts as the operator during the exploration and development stages, and both the foreign and Iranian contractor companies are jointly and severally liable to NIOC for all contractual obligations and liabilities (Maddahinasab 2017; Soleimani and Tavakolian 2017; Behdadnia and Ziyaee 2022; Bahmaei and Afshar 2025).

Unlike buyback contracts, in which the contractor's involvement ends once development is completed, IPCs require continued participation during the production phase. An Iranian company approved by NIOC must perform petroleum operations during this phase under the supervision and direction of the contractor (Ebrahimi and Shahmoradi 2017; Sharma and Pareek 2020; Behdadnia and Ziyaee 2022; Bahmaei and Afshar 2024). Therefore, the contractor remains accountable to NIOC throughout the operational period. This contrasts with the buyback structure, where contractors are not involved in production once the field is transferred back to NIOC (Maddahinasab 2017; Soleimani and Tavakolian 2017; Behdadnia and Ziyaee 2022).

A key consequence of this extended participation is the contractor's obligation to ensure that production is sustained at the Maximum Efficient Rate (MER), reflecting a shift toward production optimization responsibilities within the IPC model. Nevertheless, NIOC retains the discretionary authority to set production limits below the MER if necessary (Asgharian 2017; Farrokhi and Abaeian 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Ghorbani 2020; Molasadeqi and Noruzi 2021; Behdadnia and Ziyaee 2022; Hasanalizadeh, Zare et al. 2023; Bahmaei and Afshar 2025).

The IPC framework also offers greater operational flexibility. Unlike buyback contracts, where the Master Development Plan (MDP) typically cannot be revised after approval, the contractor under an IPC may revise, update, or propose new Development and Production Operation Plans (DPOPs) during the contract term (Maddahinasab 2017; Soleimani and Tavakolian 2017; Behdadnia and Ziyaee 2022; Tavakkoli Mohammadi, Eshaghzade et al. 2024). However, any such modification requires detailed justification to the Joint Management Committee (JMC) and must receive prior approval from NIOC. Any changes implemented without such approval are deemed invalid (Asgharian 2017; Hadavimoghaddam and Mostajeran Gortani 2019; Ghorbani 2020; Hasanalizadeh, Zare et al. 2023).

Additionally, the contractor must submit the annual work program and budget for the upcoming year to both the JMC and NIOC at the end of each year to ensure alignment with the DPOP and contractual obligations. Over-expenditure of up to 10 percent per budget line item may be allowed without additional approvals, provided that the total excess does not exceed a specified threshold (typically 5 percent) of the overall approved budget. Any spending beyond these limits requires NIOC's explicit consent.

A Joint Management Committee (JMC) is established after the effective date of both IPC and buyback contracts, consisting of five representatives from each party. The JMC supervises the petroleum operations and performs the duties assigned under the contract. Despite this shared governance structure, its decisions and recommendations must receive separate approval from NIOC to become

legally valid (Farrokhi and Abaeian 2018; Molasadeqi and Noruzi 2021; Behdadnia and Ziyaee 2022; Bahmaei and Afshar 2025). All JMC-related expenditures are classified as petroleum costs and are therefore recoverable by the contractor.

Both contractual frameworks also emphasize the maximization of local content. The contractor is obliged to carry out petroleum operations in a manner that enhances the technical capacity and competitiveness of Iranian companies operating in the industry (Farrokhi and Abaeian 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Molasadeqi and Noruzi 2021; Behdadnia and Ziyaee 2022; Bahmaei and Afshar 2024; Bahmaei and Afshar 2025).

Figure 2 presents the classification of costs under the IPC. This includes Direct Capital Cost (DCC), comprising all expenses related to assessment, field development, production activities, and human-resource development of Iranian personnel. A key distinguishing feature of IPC is that DCC is not subject to an upper financial limit; all capital expenditures directly associated with the approved annual work program, budget, and Development and Production Operation Plan (DPOP) are recoverable. In addition, Operating Costs (Opex) covering routine production and maintenance, and Indirect Costs (IDC) such as VAT, corporate income tax, customs duties, and other mandatory Iranian state levies, are also recoverable without a ceiling (Kakhki 2008; Shahri 2015; Sahebhonar et al. 2016; Asgharian 2017; Maddahinasab 2017; Soleimani and Tavakolian 2017; Baqeri et al. 2018; Farimani et al. 2020; Behdadnia and Ziyaee 2022; GholamiGhadi and Ebrahimi 2023).

The IPC additionally recognizes "cost of money," referring to interest accrued on unrecovered DCC or deferred recoverable amounts, including Opex, IDC, the contractor's remuneration fee, and COM charges. This is typically structured as LIBOR plus a fixed margin in several contracts (3–7 % in total), and it is a rate announced by Iran's Development Fund plus 2–3 % without LIBOR in new IPCs (Hasanalizadeh et al. 2023; Bahmaei and Afshar 2024; Hasanalizadeh et al. 2024; Tavakkoli Mohammadi et al. 2024).

Figure 3 outlines the expenditure structure under the buyback contract. These costs are divided into four categories (Shahri 2015; Asgharian 2017; Farrokhi and Abaeian 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Ghorbani 2020; Behdadnia and Ziyaee 2022; GholamiGhadi and Ebrahimi 2023; Tavakkoli Mohammadi et al. 2024):

A) **Capital Costs:** All direct expenditures incurred throughout the development period. Unlike in IPC, Capital Costs are capped in buyback contracts.

B) **Non-Capex Costs:** Indirect statutory and fiscal obligations such as taxes, customs duties, and fees paid to governmental organizations.

C) **Production Support and Assistance Costs:** Expenses incurred by the contractor during the production support phase, even though operational control reverts to NIOC.

D) **Operating Costs:** Direct expenditures necessary for operating activities, spare parts procurement, and insurance during production, subject to prior NIOC approval. Unlike Capital Costs, these are not capped.

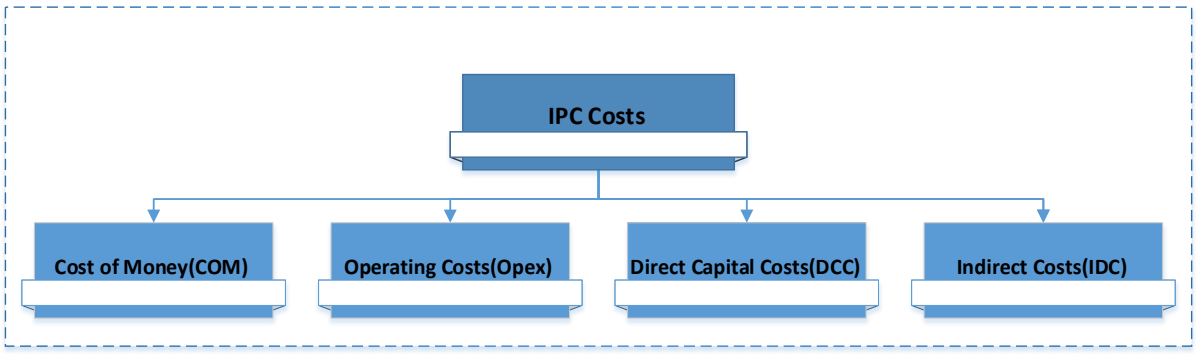

Figure 2

IPC costs (Kakhki 2008; Sahebhonar, TaheriFard et al. 2016; Asgharian 2017; Ebrahimi and Shahmoradi 2017; Maddahinasab 2017; Soleimani and Tavakolian 2017; Baqeri et al. 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Farimani, Mu et al. 2020; Ghorbani 2020; Behdadnia and Ziyaee 2022; Hasanalizadeh Zare et al., 2023; Tavakkoli Mohammadi, Eshaghzade et al. 2024)

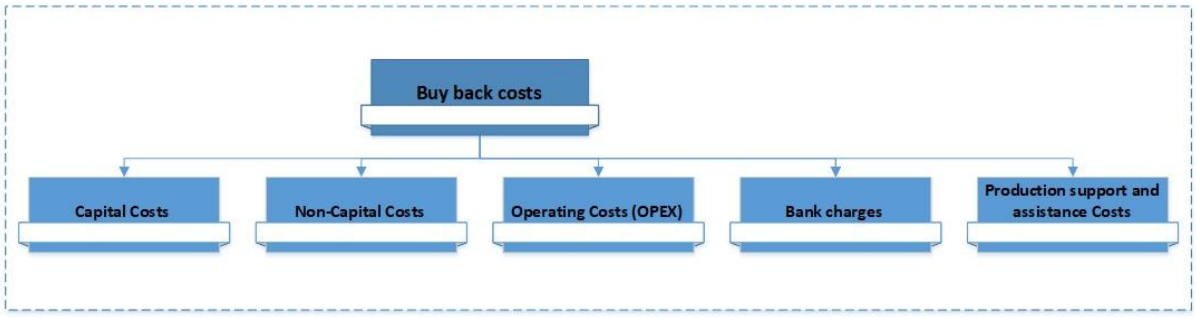

Figure 3

Buy back costs (Kakhki 2008, Sahebhonar, TaheriFard et al. 2016; Asgharian 2017; Ebrahimi and Shahmoradi 2017; Maddahinasab 2017; Soleimani and Tavakolian 2017; Baqeri et al. 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Farimani, Mu et al. 2020; Ghorbani 2020; Behdadnia and Ziyaee 2022; Hasanalizadeh, Zare et al. 2023; Tavakkoli Mohammadi, Eshaghzade et al. 2024)

Under the IPC framework, the contractor's recoverable costs and remuneration fee, shown in Figure 4, are paid from a defined share of the "additional production" (gross revenue) generated from the field. For oil fields, this recovery share is typically set at 50% of additional production, while for gas fields it may reach up to 75%. This recovery limit functions as a "cost stop," which is comparatively lower in buyback contracts where it typically ranges between 50% and 60% of gross revenue, as illustrated in Figure 5 (Shahri 2015; Sahebhonar et al. 2016; Asgharian 2017; Ebrahimi and Shahmoradi 2017; Maddahinasab 2017; Soleimani and Tavakolian 2017; Baqeri et al. 2018; Farimani et al. 2020; Ghorbani 2020; GholamiGhadi and Ebrahimi 2023).

Payments to the contractor in both IPC and buyback contracts are always subject to the cost recovery ceiling and fee payment limitations. These payments may be conducted in cash, in kind (through direct allocation or sales offset of crude oil based on a long-term contract associated with the IPC), or through a combination of both mechanisms.

If NIOC is unable to reimburse the contractor for approved petroleum costs or the contractor's due fee after First Tranche Petroleum (FTP) on the agreed due date, the outstanding balance accrues interest as "cost of money" (COM). This is calculated at an agreed margin, typically 3–9% above LIBOR, but in all cases not exceeding the maximum rate mutually established by the parties, generally between 8% and 10% (Shahri 2010; Asgharian 2017; Farrokhi and Abaeian 2018; Hadavimoghaddam and

Mostajeran Gortani 2019; Ghorbani 2020; Hasanalizadeh et al. 2023; Bahmaei and Afshar 2024; Tavakkoli Mohammadi et al. 2024).

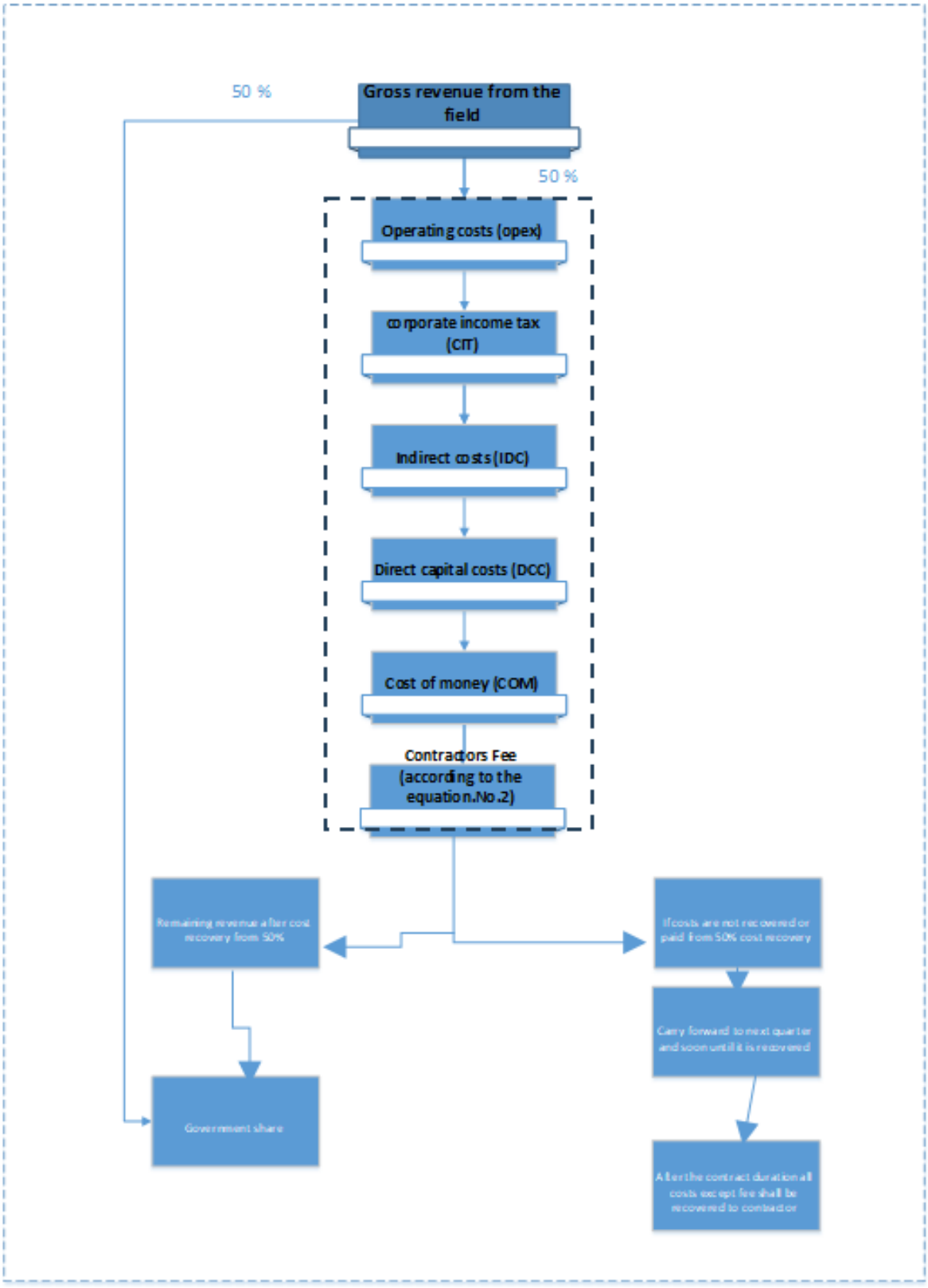

Figure 4

IPC financial model

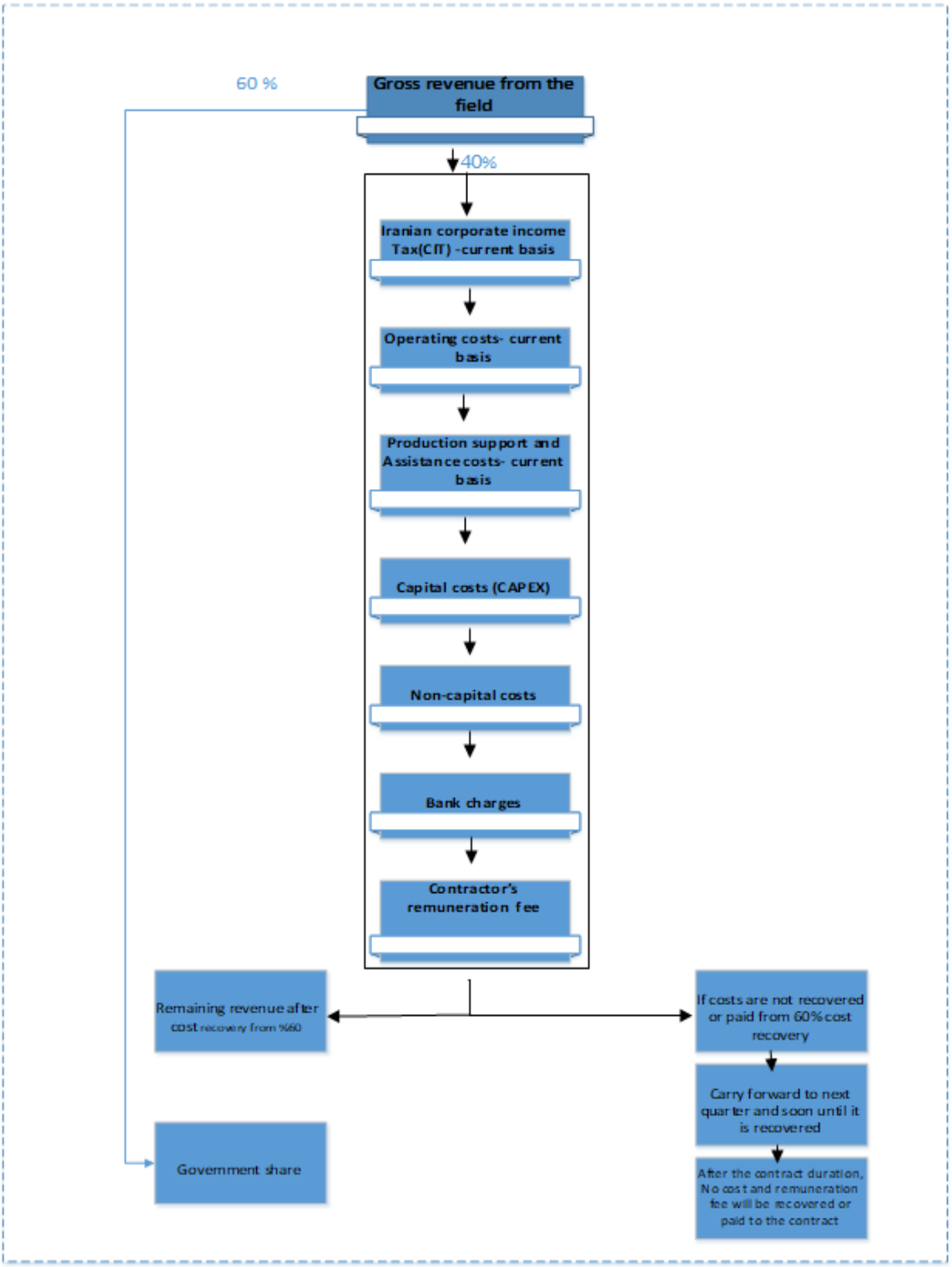

Figure 5

Buyback financial model (Shahri 2015; Sahebhonar, TaheriFard et al. 2016; Asgharian 2017; Ebrahimi and Shahmoradi 2017; Maddahinasab 2017; Soleimani and Tavakolian 2017; Baqeri et al. 2018; Ghorbani 2020)

The termination provisions under IPC and buyback contracts reflect different approaches to managing contractor non-performance. In an IPC contract, NIOC has the authority to terminate the agreement if the contractor commits any of the following failures (Asgharian 2017; Farrokhi and Abaeian 2018; Fini,

Bagheri et al. 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Farimani, Mu et al. 2020; Hasanalizadeh, Zare et al. 2023; Tavakkoli Mohammadi, Eshaghzade et al. 2024):

1. Non-compliance with contractual obligations in executing petroleum operations.
2. Failure to expend the minimum obligated costs specified in the contract (e.g., $90 million within two years of the effective date).
3. Inability to achieve First Tranche Production (FTP) within the agreed-upon timeframe.
4. Suspension of petroleum operations for a period exceeding circumstance attributable to NIOC's gross negligence or misconduct, without NIOC's approval, or due to force majeure.
5. Breach of substantial or material obligations outlined in the contract.

If termination occurs before FTP is achieved, the contractor forfeits any right to recover petroleum costs, receive fee payments, or claim other compensation. However, if termination occurs after FTP, unrecovered costs and unpaid fees up to the termination date are calculated and paid in equal quarterly installments over an agreed-upon period. Any amounts unrecovered due to cost recovery and payment ceilings are carried forward to subsequent quarters under the Contract Operating Mechanism (COM).

By contrast, buyback contracts allow NIOC to terminate the agreement under three specific circumstances (Asgharian 2017; Farrokhi and Abaeian 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Farimani, Mu et al. 2020):

A. The contractor fails to make payments due under the contract, adversely affecting project performance.

B. The contractor fails to remedy a breach of a significant contractual obligation.

C. The contractor becomes insolvent.

In all buyback termination cases, the contractor forfeits any right to recover petroleum costs or receive remuneration fees.

These differing termination frameworks highlight the variations in risk allocation and financial consequences for contractors under IPC and buyback contracts, reflecting NIOC's strategic priorities and the distinctive characteristics of each contractual model. If NIOC terminates the IPC contract due to force majeure or withdraws due to impossibility **before** the First Tranche Production (FTP) date, the contractor remains responsible for recovering costs incurred and paid by the JMC and NIOC prior to termination. Payment for these approved costs, the contractor's fee, and any applicable cost of money (COM) will be made in equal quarterly installments over the agreed period, subject to the contract's cost-stop provisions (Asgharian 2017; Farrokhi and Abaeian 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Farimani, Mu et al. 2020; Ghorbani 2020; Hasanalizadeh, Zare et al. 2023; Bahmaei and Afshar 2025).

If termination occurs **after** FTP due to force majeure or impossibility, the contractor is reimbursed for incurred approved costs, fees, and COM in equal quarterly installments over the contractually agreed period, while still respecting the recovery and payment ceiling (Farrokhi and Abaeian 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Molasadeqi and Noruzi 2021; Behdadnia and Ziyaee 2022; Bahmaei and Afshar 2025).

Under buyback contracts, although the contractor's costs and remuneration in a given quarter must exceed the cost-stop threshold to be recoverable, any excess is carried forward to subsequent quarters. After the contract term, however, unrecovered costs or fees are no longer reimbursed. In contrast, under

IPC, costs and fees exceeding the cost-stop threshold in a quarter are similarly carried forward to the following quarter, and the contractor's expenses remain reimbursable even after the contract expires, although the fee is not paid (Ebrahimi and Shahmoradi 2017; Soleimani and Tavakolian 2017; Farrokhi and Abaeian 2018; Molasadeqi and Noruzi 2021; Hasanalizadeh, Zare et al. 2023; Tavakkoli Mohammadi, Eshaghzade et al. 2024).

In IPC, similar to a buyback contract, the contractor is responsible for compensating all losses and damages that occur during petroleum operations, except those directly caused by NIOC. Consequently, the contractor must provide and maintain insurance coverage, including back-to-back insurance, an insurance coverage plan, third-party liability insurance, construction all-risks insurance, and insurance for damage to equipment, installations, and the environment, within a specified period from the contract's effective date. The contractor is required to obtain the necessary insurance with minimal deductibles. Insurance costs paid by the contractor, upon NIOC's approval, are recoverable under the Direct Capital Costs of the contract (Asgharian 2017; Hadavimoghaddam and Mostajeran Gortani 2019; Ghorbani 2020; Bahmaei and Afshar 2025).

The International Oil Company (IOC) must establish a branch in Iran for project coordination purposes. Activities of this branch are subject to a distinct tax regime as declared by Iranian taxation authorities, excluding Article 107 of Iran's Direct Tax Law and its by-laws. Corporate Income Tax (CIT) paid by the IOC for activities related to the IPC is reimbursable as IDC. However, taxes incurred for activities unrelated to the IPC are non-recoverable. The maximum recoverable CIT for the Iranian partner of the IOC is the total fee plus COM paid by NIOC for the partner's interest, multiplied by the applicable tax rate. If the contractor falls under Article 107 of the Iranian Direct Tax Law or its by-laws, NIOC is responsible for paying the CIT. NIOC is not liable for CIT reimbursement to the contractor's subcontractors, affiliates, or employees (Ebrahimi and Shahmoradi 2017; Soleimani and Tavakolian 2017; Farrokhi and Abaeian 2018; Molasadeqi and Noruzi 2021; GholamiGhadi and Ebrahimi 2023; Bahmaei and Afshar 2024).

Under IPC, similar to a buyback contract, NIOC provides land and water for drilling, access roads to project sites, work and entry permits for the contractor's employees, affiliates, subcontractors, and their dependents, permits and registrations to open an IOC branch in Iran, and customs clearance for the import and export of equipment and materials. Additionally, NIOC indemnifies the contractor against any losses or damages resulting from third-party claims related to the use of land allocated for petroleum operations (Farrokhi and Abaeian 2018; Hasanalizadeh, Zare et al. 2023; Bahmaei and Afshar 2024; Tavakkoli Mohammadi, Eshaghzade et al. 2024).

IPC is also similar to buyback in that NIOC owns any technology developed or intellectual property created as a result of petroleum operations. The contractor retains ownership of all assets, installations, and properties—movable or immovable—that it develops, acquires, or provides, provided that their costs are not recoverable under the contract terms (Farrokhi and Abaeian 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Molasadeqi and Noruzi 2021).

The HSSE requirements referenced in buyback contracts have been replaced by ESHIA (Environmental, Safety, Security, Social, and Health Impact Assessment) in IPC. The contractor is required to fully comply with ESHIA obligations. Any failure to comply must be remedied at the contractor's sole expense, and the incurred costs are non-recoverable. Furthermore, the contractor must observe all applicable laws and adhere to the best international petroleum industry practices regarding environmental protection related to or arising from contract performance (Farrokhi and Abaeian 2018; Ghorbani 2020; Bahmaei and Afshar 2024; Bahmaei and Afshar 2025).

In IPC, similar to buyback contracts, the contractor is required to comply with Iran's local content law and maximize the use of Iranian-sourced goods, services, and materials. At least 51% of services, materials, and equipment used by the contractor must meet this requirement, while services provided by the Iranian operator are excluded from the calculation (Asgharian 2017; Farrokhi and Abaeian 2018; Ghorbani 2020; Behdadnia and Ziyaee 2022; Hasanalizadeh, Zare et al. 2023; Bahmaei and Afshar 2024). Non-compliance constitutes a material breach of the contract. The contractor and its subcontractors must also adhere to restrictions on employing foreign nationals, except for positions that cannot be filled due to the absence of qualified and experienced Iranian citizens. Any other positions require prior written approval from NIOC (Asgharian 2017; Ebrahimi and Shahmoradi 2017; Soleimani and Tavakolian 2017; Ghorbani 2020; GholamiGhadi and Ebrahimi 2023; Bahmaei and Afshar 2024, 2025). The contractor is obliged to take reasonable steps to replace foreign employees with qualified Iranian personnel as they become available.

Regarding dispute resolution under IPC contracts, similar to buyback contracts, the parties must first attempt to resolve disputes, disagreements, or claims amicably, typically within 90 days. If the dispute remains unresolved, it proceeds to an Alternative Dispute Resolution (ADR) mechanism, which may include negotiation, reconciliation, non-binding third-party expert determination, or mediation, as mutually agreed, within a designated period (usually 90 days). If the dispute persists after ADR, arbitration follows, involving a panel of three arbitrators as per the agreed procedure. The arbitration award is final, binding, and enforceable in any competent court. The process is governed by Iranian laws and regulations (Asgharian 2017; Farrokhi and Abaeian 2018; Ghorbani 2020; Behdadnia and Ziyaee 2022; Hasanalizadeh, Zare et al. 2023; Bahmaei and Afshar 2024, 2025).

By contrast, dispute resolution under buyback contracts does not include an ADR mechanism. Disputes must first be addressed amicably within the contractually specified period. Failing this, disputes proceed directly to ad-hoc arbitration with three arbitrators: each party appoints one arbitrator, and the two jointly appoint a third. Decisions are made by a majority vote. As with IPC, the arbitration award is final, binding, and enforceable in any court, and Iranian law governs the process (Farrokhi and Abaeian 2018; Ghorbani 2020; Behdadnia and Ziyaee 2022; Hasanalizadeh, Zare et al. 2023; Bahmaei and Afshar 2024).

Regarding the contractor's fee, the initial IPC model used an *R* factor to determine remuneration (Equation 1), whereas buyback contracts stipulate a fixed percentage (15–18%) of capital costs. To regulate excess profits, the IPC's fee decreases as the R factor increases (Shahri 2015; Sahebhonar, TaheriFard et al. 2016; Asgharian 2017; Ebrahimi and Shahmoradi 2017; Maddahinasab 2017; Soleimani and Tavakolian 2017; Baqeri et al. 2018; Farimani, Mu et al. 2020; Ghorbani 2020; GholamiGhadi and Ebrahimi 2023). Currently, to attract foreign investment, IPC fees are calculated based on Internal Rate of Return (IRR) and fee per barrel of oil or per million standard cubic feet of gas using Equation 2, rendering the original *R* factor method obsolete.

$$RF=TCP/TCC \tag{1}$$

where RF is contractors' remuneration fee, TCP indicates cumulative cash receipt by contractor from effective date up to the end of calendar quarter, and TCC represents cumulative petroleum costs, incurred and paid by contractor from effective date up to the end of same calendar quarter.

$$Fee(Q) = FBBL \times AC(Q) \times QDIP \tag{2}$$

where *Fee(Q)* is the total fee payable to the Contractor for the quarter (*Q*), $FBBL$ is a fixed fee in US dollars per barrel (US$/barrel) agreed between the parties in the contract. $FBBL$ is adjusted at the end

of each quarter based on the actual Brent price in the previous quarter and the adjustment formula contractually agreed between the parties. $AC(Q)$ indicates the adjustment coefficient applicable to $FBBL$ in quarter (Q), calculated and determined by interpolating the coefficient values of the Brent price agreed by the parties in quarter (Q–1). $QDIP$ is the quarterly incremental production delivered in quarter Q.

Table 1

The contractor's remuneration for gas based on *R* factor (Shahri 2015; Sahebhonar, TaheriFard et al. 2016; Asgharian 2017; Ebrahimi and Shahmoradi 2017; Maddahinasab 2017; Soleimani and Tavakolian 2017' Baqeri et al. 2018; Farimani, Mu et al. 2020; Ghorbani 2020; GholamiGhadi and Ebrahimi 2023; Tavakkoli Mohammadi, Eshaghzade et al. 2024)

R factor	Less than 1	1≤*R*<2	2≤*R*<3	3≤*R*<4	4≤*R*
Fee per MscfB (US$)	B1	B2	B3	B4	B5

Table 2

The contractor's remuneration for oil based on R factor (Shahri 2015; Sahebhonar, TaheriFard et al. 2016; Asgharian 2017; Ebrahimi and Shahmoradi 2017; Maddahinasab 2017; Soleimani and Tavakolian 2017; Baqeri et al. 2018; Farimani, Mu et al. 2020; Ghorbani 2020; GholamiGhadi and Ebrahimi 2023; Tavakkoli Mohammadi, Eshaghzade et al. 2024)

R factor	Less than 1	1≤*R*<2	2≤*R*<3	3≤*R*<4	4≤*R*
Fee per barrel (US$)	A1	A2	A3	A4	A5

3. Legal and religious jurisprudence grounds

In Iran's religious jurisprudence, the conclusion of buyback and IPC contracts is broadly comparable to a contract of recompense, though it is not identical. These contracts can, however, be defended under Article 10 of Iran's Civil Code. Iranian jurists base the validity of contractual agreements on principles derived from the Quran and the Prophet's tradition, emphasizing that agreements must comply with these principles to be considered genuine. Eminent Iranian scholars argue that every mutual agreement is binding, provided it does not violate canon law, as reinforced by the Quranic injunctions regarding loyalty to contracts. Consequently, it is reasonable to infer that IPC and buyback contracts do not conflict with these religious and legal norms.

The Iranian parliament has approved approximately 15 Acts to regulate the petroleum industry and encourage foreign investment. While Article 6 of the Iran Petroleum Law of 1987 prohibited foreign investors from actively participating in petroleum operations, Article 5 of the same law permitted the conclusion of petroleum contracts with foreign investors. Iran has employed risk oil service contracts since the 1950s, which were subsequently renamed buyback contracts following the Iranian Revolution.

The first legal framework explicitly authorizing buyback contracts in the Islamic Republic of Iran was established under Clause "H" of Note 29 of the First Economic, Social, and Cultural Development Plan Act, ratified in 1989. Although this law did not explicitly mention buyback contracts, it emphasized the ring-fencing principle, granting the National Iranian Oil Company (NIOC) the authority to enter into contracts valued at up to USD 3 billion for the development of the Pars and South Pars oil and gas fields with reputable foreign companies. The term "buyback" was explicitly used for the first time in subparagraph A, paragraph B, Article 29 of the 1994 Budget Law. Subsequent authorization for such contracts was reinforced in Iran's Second and Third Five-Year Economic Development Plans (1994–2004).

Notable oil and gas fields developed under buyback contracts between 1994 and 2004 include Siri A and E, Phases 2 and 3 of South Pars, Dorood, Soroush, Nowruz, Balal, Phases 4 and 5 of South Pars, and Darkhovin. However, several contracts did not proceed to the development stage due to a lack of commercial discoveries, with the full exploration risk borne by the contractors. The 1994 Budget Law (Note 29) emphasized the repayment of investment installments from production revenues, a core principle of buyback contracts, even though the term itself was not explicitly mentioned (Ebrahimi and Shahmoradi 2017; Behdadnia and Ziyaee 2022; GholamiGhadi and Ebrahimi 2023).

Further legislative support for buyback contracts was provided in budget laws from 2003–2005 and 2005–2009. During this period, NIOC was explicitly authorized in the Fourth Five-Year Economic and Development Plan to adopt buyback contracts that combined both exploration and development phases, giving rise to the second generation of buyback contracts. These provisions were reaffirmed in the 2007–2009 budget laws. The third generation of buyback contracts was introduced during 2009–2011 (Ebrahimi and Shahmoradi 2017; Behdadnia and Ziyaee 2022; GholamiGhadi and Ebrahimi 2023).

Major mines are among the key industries under government control, as stipulated in Principle 44, Paragraph 2 of the Iranian Constitution. According to Principle 45[†], natural resources, including mines, are considered public wealth and property, which the Islamic Republic of Iran may utilize in the public interest.

The Foreign Investment Promotion and Protection Act (FIPPA), ratified in 2002, has played a central role in attracting foreign investors. Under Paragraph 2, Article 3 of this Act[‡], NIOC is authorized to engage foreign investors through various contractual frameworks, including Build, Operate, and Transfer (BOT), buyback, and joint ventures, for government-owned sectors, provided the ring-fencing principle is respected. Foreign investors are permitted to establish a branch in Iran with full ownership (100% of shares) or acquire shares in an existing Iranian company under the provisions of FIPPA. However, the value of goods and services produced through foreign investment under this Act must not exceed 25% of the total value of goods and services in each economic sector, or 35% in each field at the time of license issuance.

The Islamic Republic of Iran's economic activities are categorized into three groups under the statute implementing the general policies of Article 44 of the Constitution:

- **Group 1:** Activities exclusively owned by the private sector.
- **Group 2:** Activities in which the government may hold up to 20% of shares, while the private sector may hold up to 100%; this category includes the downstream oil and gas sectors.
- **Group 3:** Activities exclusively under government control, including oil mines/fields, NIOC, Exploration and Promotion companies (established at the time of the Act's approval), and others.

As stipulated in Article 3, Paragraph 1 of the Foreign Investment Promotion and Protection Act (FIPPA), foreign investors are permitted to engage in sectors where private sector participation is

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[†]. Principle 45: "The Islamic government shall have access to public wealth and property—including uncultivated or abandoned lands, mineral deposits, seas, lakes, rivers, and other public waterways, as well as mountains, valleys, forests, marshlands, natural forests, and unenclosed pastures—for the purpose of utilizing them in the public interest."

[‡]. Article 3, Paragraph 2 of Foreign Investment Promotion and Protection Act: "Foreign investment in all sectors under the frameworks of Civil Participation, Buyback, and Build-Operate-Transfer (BOT) schemes is permitted, provided that the return of capital and profits is derived solely from the economic performance of the project in which the investment is made. Such return shall not depend on any guarantee by the Government or by government-owned companies or banks."

allowed under Iranian laws and regulations. Accordingly, based on the analysis of FIPPA, Article 44 of the Iranian Constitution, and the law governing the implementation of the general policies of Article 44, it is evident that private sector participation and direct foreign investment in Groups 1 and 2 are permissible.

However, activities within Group 3 are restricted, except for contractual frameworks explicitly specified in FIPPA—such as Build-Operate-Transfer (BOT), buyback, and public-private partnership schemes. Pursuant to Paragraph 4, Article 3 of the Law on Iran Oil Ministry Obligations and Responsibilities (2012), attracting foreign capital through partnerships with both foreign and domestic investors is allowed, without requiring the transfer of produced or in-reservoir oil, provided that optimal production is maintained.

Iran's new petroleum contracts (IPCs), classified as service contracts and considered the fourth generation of buyback contracts, are subject to all legal requirements previously approved for service and buyback contracts. These contracts are carefully structured to comply with the Constitution of the Islamic Republic of Iran, domestic statutory laws, and the principles of Imamiyah jurisprudence. A key legal reference is the 2015 resolution of the Iranian Cabinet, which, under the legal authority of the Ministry of Petroleum, established the general terms, structure, and model for upstream oil and gas contracts. This resolution not only enhances transparency in drafting and executing contracts but also provides a legal foundation ensuring conformity with Iran's statutory and Islamic frameworks.

From a legal perspective, IPCs, due to their service-based nature, protect state sovereignty over underground resources while facilitating the use of foreign expertise and financial resources within a clearly defined and regulated framework. In developing the IPC model, compliance with constitutional principles—particularly Articles 44 and 45—has been explicitly considered, safeguarding public rights and national interests. The use of buyback contracts, a form of risk service contract, has been formally authorized (Ebrahimi and Shahmoradi 2017; Behdadnia and Ziyaee 2022; GholamiGhadi and Ebrahimi 2023).

In summary, under the aforementioned laws and regulations, there are no impediments to establishing service contracts and production-sharing agreements (according to Article 44 of the 7th Social and Economic Development plan, NIOC can enter production sharing contracts with IOCs only for the production and development of oil and gas fields shared with other countries), provided that optimal production is maintained and state ownership and sovereignty over oil and gas reservoirs are preserved. Conversely, the execution of concession contracts or revenue-sharing agreements that could result in foreign dominance over reservoirs or fields is prohibited.

4. Hazard events of IPC and Buyback contract from NIOC's perspective

The contractor faces higher hazards than NIOC under IPC and buyback contracts, as these are governmental contracts based on templates provided by NIOC. From NIOC's perspective, several hazards are associated with these contracts:

4.1. Challenges in attracting foreign investment:

One of the major difficulties of IPC and buyback contracts is their limited attractiveness to foreign investors due to political, economic, and financial sanctions imposed by the United States and other Western countries. Additional deterrents include banking restrictions, technology transfer barriers, and trade limitations. Consequently, major international oil companies are reluctant to enter the Iranian market.

To ensure effective exploration and development of oil and gas fields, Iran must offer additional incentives to foreign investors while safeguarding national interests. Potential measures include:

- Considering production-sharing contracts,
- Addressing all hazard factors in buyback contracts to enhance contractor appeal,
- Leveraging the inherent advantages of these contract types,
- Strengthening domestic capabilities to compete with international firms.

Negative consequences of limited foreign investment:

a) Neighboring countries, such as Qatar, Iraq, and the UAE, capitalize on international investments to develop shared fields, while Iran, restricted by sanctions, cannot participate fully.
b) Reduced foreign investment results in lower production, leading to a decline in foreign exchange revenues. This diminishes resources available for other sectors, industries, and infrastructure, potentially causing public dissatisfaction.

4.2. Uncapped capital costs in IPC contracts:

Unlike buyback contracts, IPC contracts do not impose a specific ceiling on capital costs (Farrokhi and Abaeian 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Molasadeqi and Noruzi 2021; Behdadnia and Ziyaee 2022; Bahmaei and Afshar 2024, 2025). This absence of limitation can lead to uncontrolled cost escalation and project delays, increasing the risk of administrative corruption and financial misuse, thereby threatening national interests.

Adverse consequences of uncapped capital expenditures:

- Contractors may overstate or inflate costs, placing a financial burden on NIOC.
- Unnecessary expenses can reduce project efficiency and oil and gas revenues.
- Heightened risk of financial corruption during cost approval can undermine transparency and credibility.

Mitigation measures:

It is essential to implement strict controls and monitoring mechanisms over expenditures, with defined processes for cost approval to prevent abuse. One feasible approach is to adopt a capped structure for capital expenditures, similar to buyback contracts, while allowing contractors to recover additional costs under strict supervision. For instance, an additional cost recovery of 30–40% of the cap could be permitted, mirroring Syria's production-sharing model, where a 20% additional cost cap is allowed. Such mechanisms would safeguard financial integrity and ensure efficient execution of IPC contracts.

4.3. Capital expenditure caps: IPC vs. buyback contracts

Unlike IPC contracts, which do not impose a cap on capital expenditures, buyback contracts are subject to a predetermined ceiling on such expenditures (Farrokhi and Abaeian 2018; Hadavimoghaddam and Mostajeran Gortani 2019; Molasadeqi and Noruzi 2021; Behdadnia and Ziyaee 2022; Bahmaei and Afshar 2024, 2025). While this capped approach ensures better cost control and reduces the financial burden on the National Iranian Oil Company (NIOC), it is often considered less attractive to contractors due to the inherent complexities of oil fields (Shahri 2015; Sahebhonar, TaheriFard et al. 2016; Asgharian 2017; Ebrahimi and Shahmoradi 2017; Maddahinasab 2017; Soleimani and Tavakolian 2017; Baqeri et al. 2018; Ghorbani 2020; GholamiGhadi and Ebrahimi 2023; Tavakkoli Mohammadi, Eshaghzade et al. 2024).

The capped structure can constrain the contractor's flexibility to respond to unexpected challenges or additional costs arising from the unique geological and operational conditions of the field. This limitation may hinder operational optimization and reduce efficiency.

Proposed Hybrid Model:

A hybrid model combining the benefits of capped and uncapped structures can address this issue:

- **Adjustable Cap for Field Complexity:** Set an initial cap based on the field's characteristics and operational complexity. Allow adjustments if unforeseen challenges or additional costs arise, subject to approval by an independent regulatory body.
- **Cost Recovery Buffer:** Introduce a buffer (e.g., an additional 20–30% above the cap) that contractors can access upon justifying extra expenses with detailed documentation and receiving approval from NIOC or a supervisory entity.

4.4. Oversight of contractor expenditures

In both IPC and buyback contracts, the Joint Management Committee (JMC) and NIOC representatives are responsible for approving contractor expenditures. However, insufficient monitoring increases the risk of inflated cost approvals and financial corruption, leading to wasted resources, increased NIOC debt, and diminished trust among investors and international stakeholders.

Mitigation Measures:

- Reform the oversight structure to ensure stringent inspections.
- Enhance the role of the General Inspection Organization to improve transparency and prevent financial misconduct.

4.5. Delays and suspension of oil operations

Operational delays or suspension of petroleum activities in both IPC and buyback contracts—caused by operational challenges, delayed commercial discoveries, untimely JMC or NIOC approvals, disputes with local stakeholders, equipment failures, or logistical constraints—pose significant financial and operational hazards.

Impacts on Contractors:

- Directly hinder the ability to achieve commercial production.
- Postpone reimbursement of costs and payment of fees, affecting economic viability.

Impacts on NIOC:

- Suspension or postponement of production results in direct financial losses.
- Delays incur consequential damages due to unrealized production or deferred output, especially in volatile global markets.
- Prolonged delays can erode NIOC's credibility with international investors and contractors, reducing the attractiveness of Iran's oil and gas projects.

Mitigation Strategies:

- Employ advanced project management techniques and digital monitoring systems for timely execution of exploration, development, and production phases.

- Define precise and transparent roles and contractual obligations to eliminate ambiguities.
- Develop compensation mechanisms for equitable management of delays.
- Strengthen JMC oversight to expedite decision-making and prevent unnecessary delays.

Implementing these strategies can significantly reduce the adverse impacts of delays while safeguarding the interests of both contractors and NIOC.

4.6. Currency conversion risks

In both IPC and buyback contracts, contractors' costs denominated in Iranian Rials are converted into U.S. Dollars. Discrepancies between the official exchange rate and the free-market exchange rate can create substantial financial challenges for NIOC, potentially increasing costs and contributing to budget deficits.

Illustrative Example:

- A contractor incurs costs of 1,000,000,000 IRR, which NIOC approves.
- Using the official Central Bank rate (e.g., 4,200 IRR/USD on July 10, 2014), this converts to $238,095.
- When repayment occurs in USD to a foreign account, the corresponding Rial amount may be calculated using the free-market rate (e.g., 65,000 IRR/USD), effectively giving 1,547,650,000 IRR.

Implication: Exchange rate fluctuations highlight the need to reform cost calculation and repayment models to align with actual market conditions. Such reforms are crucial to mitigate discrepancies, ensure fairness, and safeguard NIOC's financial health.

4.7. Corporate income tax (CIT) responsibility

Under IPC and buyback contracts, contractors are responsible for paying Corporate Income Tax, which is ultimately recoverable by the contractor. This approach conflicts with the philosophy of Iran's taxation regime, as contractors bear the tax burden without explicit recovery mechanisms. This misalignment may create financial inefficiencies and disputes.

4.8. Social liability considerations

Buyback contracts do not explicitly address social liabilities, and IPCs inadequately depict them. Social obligations, such as community engagement, local employment, and environmental stewardship, should be thoroughly integrated into future contracts to align with national development goals and safeguard public interest.

4.9. Dispute resolution mechanisms

While both IPC and buyback contracts include international arbitration or ADR provisions, the absence of a robust domestic dispute resolution mechanism poses risks to NIOC and national interests. Reliance solely on international arbitration may expose Iran to unfavorable rulings influenced by geopolitical factors or misinterpretation of Iranian law.

Recommendation: Adopt a dual-layered dispute resolution framework:

- **Local Jurisdiction:** Use domestic courts for disputes of a purely national nature.
- **International Arbitration:** Reserve arbitration for cross-border or international disputes.

This approach balances protection of national interests with the need for credible resolution of international disputes.

4.10. Contractual ambiguities

IPC and buyback contracts often contain vague or complex provisions—especially concerning cost recovery, remuneration formulas, and operational timelines. These ambiguities can lead to prolonged negotiations, disputes, and operational delays, ultimately harming NIOC's financial and strategic interests.

Recommendation:

- Employ precise, unambiguous language in contracts.
- Conduct comprehensive legal reviews to ensure consistency with Iranian laws and regulations.
- Clearly define operational timelines, cost recovery methods, and fee structures to minimize misinterpretations and streamline project execution.

4.11. Technology transfer shortcomings

Although IPC and buyback contracts mandate the transfer of technology and knowledge from foreign contractors to Iranian entities, enforcement has been largely ineffective. Contractors may provide outdated or limited technology and fail to adequately train local personnel, restricting NIOC's ability to build technical independence.

Recommendation:

- Strengthen oversight mechanisms to ensure compliance with technology transfer obligations.
- Implement mandatory reporting and independent audits.
- Establish clear metrics for measuring technology transfer and personnel training to ensure contractors fulfill their obligations.

4.12. Delays in utilization of associated gas

A key challenge in both IPC and buyback contracts is the frequent delay or neglect in monetizing associated gas produced during oil extraction. Contractors often prioritize oil production, resulting in:

- Unnecessary flaring of valuable gas resources.
- Environmental harm and increased greenhouse gas emissions.
- Loss of potential revenue from gas exports or domestic utilization.

Recommendation:

- Incorporate binding contractual obligations requiring contractors to prioritize gas utilization and monetization.
- Establish clear timelines, deliverables, and performance indicators.
- Introduce penalties for non-compliance to incentivize adherence.

4.13. Geopolitical risks in shared reservoirs

IPC and buyback contracts insufficiently address the complexities of shared oil and gas fields with neighboring countries. Aggressive extraction policies by neighboring states can lead to:

- Resource depletion in jointly-owned reservoirs.
- National losses if Iran's share of production is compromised.

Recommendation:

- Include contractual mechanisms to expedite project timelines.
- Define performance benchmarks for contractors in joint fields.
- Promote bilateral or multilateral agreements with neighboring countries to safeguard equitable resource management and national interests.

4.14. Signature bonuses and royalties

Current IPC and buyback contracts do not include signature bonuses or royalties, which are common in many international upstream petroleum agreements.

Recommendation:

- Incorporate these mechanisms to provide additional incentives for contractors and align with global industry practices.
- Define the calculation, timing, and payment structure for royalties and bonuses clearly in the contract.

4.15. Environmental risks and liabilities

Environmental risks in IPC and buyback contracts are inadequately addressed, exposing NIOC to financial and reputational hazards, including:

- Oil spills, gas flaring, and ecological damages.
- Potential evasion of responsibility by contractors.
- Costs of remediation falling on NIOC.

Recommendation:

- Clearly define the environmental responsibilities of contractors.
- Include mandatory financial penalties for non-compliance.
- Require environmental insurance to cover potential damages.
- Align contractual obligations with international environmental standards and best practices to promote sustainable operations.

5. Conclusions

The petroleum industry remains one of the most complex and risk-intensive sectors globally, with developing countries like Iran facing compounded challenges in attracting foreign investment due to financial, technical, and geopolitical constraints. For Iran, the introduction of the Iranian Petroleum Contract (IPC) represented a significant shift aimed at addressing the limitations of the buyback framework and creating a more attractive environment for foreign investors. However, despite the legal validity of both IPCs and buyback contracts under Iranian law, this study shows that these models have not effectively achieved their economic and strategic objectives, particularly in light of Iran's broader developmental needs and the constraints imposed by international sanctions. Through a comparative legal and contractual analysis—including examinations of the IPC for the Cheshmeh Khosh oil field

and the buyback contract for the Yadavaran field—this study identifies key deficiencies in the current contractual frameworks from the perspective of the National Iranian Oil Company (NIOC). While IPCs were designed to mitigate some risks inherent in buyback contracts, they fail to provide adequate mechanisms to align contractor incentives with national priorities, ensure sustainable production, or attract significant foreign investment. A critical issue is that IPCs lack the adaptability and balanced risk allocation that characterize other internationally utilized upstream contracts.

The study further highlights that the shortcomings of IPCs and buyback contracts extend beyond economic inefficiencies. Their rigid structures have undermined Iran's ability to secure the timely and strategic development of shared oil and gas fields, leading to diminished national benefits and exposing resources to depletion by neighboring states. Such outcomes conflict with the principle of safeguarding national interests, a core tenet of Iranian law and energy policy. From a legal and contractual perspective, the findings underscore the importance of exploring alternative upstream petroleum frameworks, particularly Production Sharing Contracts (PSCs). Widely adopted in other jurisdictions, PSCs offer a more balanced risk-reward structure by granting contractors a share of production at the delivery point, typically at export terminals. This approach not only aligns with international best practices but also provides a more flexible and competitive model that could address Iran's economic and geopolitical constraints, especially during periods of heightened sanctions. Adopting PSCs would enable Iran to better balance national interests with the commercial expectations of foreign investors, fostering stronger alignment between legal frameworks, contractual terms, and economic outcomes.

This study concludes that while IPCs and buyback contracts are legally valid under Iranian law, their inability to attract foreign investment and mitigate the inherent risks of upstream operations necessitates a fundamental reevaluation of Iran's contractual regime. To prevent further economic losses and ensure the sustainable development of its energy sector, Iran's legislature should consider a paradigm shift toward globally competitive frameworks. By adopting flexible, incentive-based models such as PSCs, Iran can safeguard its energy sovereignty, optimize resource utilization, and navigate the challenges posed by sanctions and geopolitical pressures.

Nomenclature

ADR	Alternative dispute resolution
BOT	Build operate transfer
CIT	Corporate income tax
COM	Cost of money
DPOP	Development and production operation plan
ESHIA	Environmental, safety, security, social and health impact assessment
FIPA	Foreign investment promotion and protection act
FTP	First targeted production
IDC	Indirect costs
IOC	International oil company
IPC	Iranian Petroleum Contracts
IRR	Internal rate of return
JMC	Joint management committee
MDP	Master development plan
MER	maximum efficient rate

NIOC	National Iranian Oil Company
OPEX	Operating costs
PSC	Production sharing contract
TCM	Trillion cubic meters

References

Asgharian, M. (2017). "Developments of Iranian upstream contracts under the recently approved regulatory regime." Oil, Gas & Energy Law 15(3).

Bahmaei, M. A. and E. Afshar (2024). "The Main Policies of International Oil Companies (IOCs) in Petroleum Contracts: An Overview on Risk Service Contracts in Iran's Upstream Oil Industry." Petroleum Business Review 8(2): 83–103.

Bahmaei, M. A. and E. Afshar (2025). "New Iran's Petroleum Contract "IPC" in comparison with buyback and Production Sharing Agreement." Energy Strategy Reviews 57: 101599.

Baqeri, Fini, and Qorbani (2018), "A Comparative Analysis of the Contractual Frameworks of Buyback Contracts and the Iranian Petroleum Contract (IPC) with Respect to Ownership Rights, Reserve Recognition," and the Fiscal Regime, Energy Law Studies, 4(2): 547–570 [In Persian].

Behdadnia, Y. and S. Y. Ziyaee (2022). "Legal Nature of Iran Petroleum Contracts in International and Iranian Law." International Studies Journal (ISJ) 19(1): 177–196.

Ebrahimi, S. and E. Shahmoradi (2017). "A comparative analysis of contractual considerations in oil and gas contracts with an emphasis on Iranian petroleum contracts." Oil, Gas & Energy Law 15(3).

Farimani, F. M., X. Mu, H. Sahebhonar and A. Taherifard (2020). "An economic analysis of Iranian petroleum contract." Petroleum Science 17: 1451–1461.

Farrokhi, A. and M. Abaeian (2018). "A comparison study on contractual and financial issues between buyback and IPC Case study of Anaran oil field." Strategic Studies of public policy 8(27): 89–108.

Ghandi, A. and C.-Y. C. L. Lawell (2017). "On the rate of return and risk factors to international oil companies in Iran's buyback service contracts." Energy Policy 103: 16–29.

GholamiGhadi, H. and S. N. Ebrahimi (2023). "Critical Review of IPC's Fiscal Regime." Journal Of Researches Energy Law Studies 8(2): 401–420.

Ghorbani, E. (2020). "Exploration, development and production of Iran's fields and reservoirs through the Iran Petroleum Contract (IPC)." Journal of Energy & Natural Resources Law 38(4): 437–454.

Hadavimoghaddam, F. and M. Mostajeran Gortani (2019). "Iran Petroleum Contract (IPC)-A New Generation of Oil Contracts." Actual Probs. Econ. & L.: 1522.

Hasanalizadeh, A., A. Zare and M. Montazer (2023). "Legal analysis of the fiscal regime of IPC upstream contracts in the oil and gas industry in Iran." Journal of Investment Knowledge 12(46): 815–830.

Hasanalizadeh, A., A. Zarea and M. Montazer (2024). "Comparative Analysis of the Financial Regime of New Petroleum Contracts, Known as IPC, and Buyback Trade in Terms of Costs." Journal of Investment Knowledge 13(49): 217–230.

Kakhki, M. M. H. (2008). A critical analysis of Iranian buyback transactions in the context of international petroleum contractual systems, Durham University.

Li, C., M. Jiang, H. Ge, Z. Li and D. Luo (2017). "An operational risk analysis of Iran buyback contract and its policy implication." Energy strategy reviews 16: 43–53.

Maddahinasab, M. (2017). "Fiscal analysis of new Iranian petroleum contract called IPC from a legal and contractual perspective." Oil, Gas & Energy Law 15(3).

Molasadeqi, M. B. and M. Noruzi (2021). "Comparison of the capacity of Buyback and IPC contracts from the perspective of technological learning in the upstream part of the oil industry." Journal of Energy Planning and Policy Research 7(3): 86–106.

Petroleum, B. (2019). "BP statistical review of world energy 2017." Statistical review of world energy 65.

Sahebhonar, H., A. TaheriFard and F. M. Farimani (2016). Economic Analysis of New Iranian Petroleum Contract (IPC): The Case Study of Caspian Sea Fields. Energy Economics Emerging from the Caspian Region: Challenges and Opportunities, 1st IAEE Eurasian Conference, Aug 28–31, 2016, International Association for Energy Economics.

Shahri, N. N. (2010). The Petroleum Legal Framework of Iran: History, Trends and the Way Forward. China & Eurasia Forum Quarterly.

Shahri, N. N. (2015). "Speculations on the Contents of the New Iranian Petroleum Contracts: Buyback in Disguise?" Oil, Gas & Energy Law 13(6).

Sharma, R. and V. Pareek (2020). "The World of Energy." Springer Books.

Soleimani, M. and M. Tavakolian (2017). Comparative financial analysis of IPC, the new Iran's oil fields development and production enhancement framework IPC vs. buyback contracts. SPE Symposium: Production Enhancement and Cost Optimization, SPE.

Tavakkoli Mohammadi, M., A. Eshaghzade and M. Jafari (2024). "Assessment of Iranian Petroleum Contracts Effectiveness: A Comparative Risk Analysis Approach Using Monte Carlo Simulation." International Journal of Finance & Managerial Accounting 9(32): 71–86.