Foreign direct investment and sustainable economic development challenges in Iraq for the Period (2003–2025)

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Abstract
Few economic puzzles in the developing world are as startling as that of Iraq: a country that has lured hundreds of millions of dollars in foreign investment for two decades, yet where the jobless rate has stubbornly refused to drop below fifteen percent. Figures cannot lie but they may point toward a larger problem that total influx numbers cannot reveal. This essay is based on the paradox and will endeavor to pursue it in an orderly fashion over the years from 2003 to 2025. The paper integrated a story-telling account on the simultaneous or independent variations of investment and unemployment with certain formal econometric tests meant to clarify their relationship. It is not about poverty. Iraq has had the money. The problem is that the revenue it has collected has been channeled mostly into a single sector - oil - which does not create many jobs for Iraqi people, repatriates its profits abroad and shows no interest in developing infrastructure or labor relations that might result in widespread employment. The following results attempt to measure this difference and draw a few concrete policy implications.

1. Introduction

The twenty-first century brought significant public investment in countries transitioning to market economies, as well as additional private foreign direct investment (FDI). These investments aimed for broad structural change and, in some cases, transitioned from command economies, as in the case of Iraq in 2003. Globalization accelerated in the 1990s, increasing the volume of FDI into and out of developing countries. New communication technologies, greater openness to international trade and investment, and wider economic reforms further expanded new economic orientations. Most developing nations adopted explicit FDI policies: for instance, the introduction of the 2013 Investment Law No. 13 in Iraq to encourage private investment from home and abroad.

The academic literature has investigated the nature, determinants and impact of FDI on developing countries, especially in the post-1990 era. Investor motives for entering developing countries and the attributes of FDI recipients have largely explained the resulting effects, although the central notion of "development" itself remains elusive. Hence, FDI offers an important but far-from-exclusive channel for understanding the recovery of the Iraqi economy and society. The introduction to this study sets a conceptual benchmark by exploring what FDI means for development and forming benchmarks for the preparation of the Iraqi planning strategy as Iraq completes its first quarter century since the 2003 transition.

Starting from a macroeconomic view of development, Iraq itself is econometrically estimated to address the contribution and prospects of FDI in its contemporary socio-economic situation. The absence of mass fault-lines such as a major border dispute; evident shortage of investment capacity; recognition of public-source resources for transitional productive development; need, in the absence of war, to build formal institutional macro-control functions; and reconstruction considerations following engagement in the 2003 transition in turn suggest the necessity of combining FDI with unemployment in short-run analysis (Al-Samarrai, 2017).

Zuhair analyzed Algerian FDI data from 1996 to 2014 and confirmed, through OLS regression, the expected negative relationship between FDI inflows and unemployment rates. Zuhair attributed

this effect as being minimal and specifically due to the investment sector mix in Algeria; most foreign direct investment has gone into oil and gas because hydrocarbons do not generate a large number of jobs per dollar invested. The parallel structure involving Iraq does not need any further explanation (Zuhair, 2018).

Al-Qadi examined the Palestinian territories and reached a conclusion that can be directly applied to Iraq: legislation that is generous to foreign investors does not have much value in an institutional environment that is so unstable as to render those provisions impotent. Tax holidays cannot replace enforceable property rights, sovereign authority over legal matters, and a stable regulatory environment. Where they are not present, investment only comes in forms that do not need them — which in Iraq as well as Palestine means extractive sectors and short-horizon contracts (Al-Qadi, 2015).

The most pertinent information about Iraq in the Arabic literature is found in (Al-Samarrai, 2017). He used data for the period from 2003 to 2015 and reported that more than 60% of total FDI inflows during this period were into oil contracts. It also explained why concentration gives rise to an apparent paradox with some precision: high investment and high unemployment. The answer is straightforward; it was deliberate that foreign experts occupy positions in the oil industry instead of Iraqi labor.

Awan et al. have shown that the impact of foreign direct investment on employment is more sector-specific than capital-specific, using evidence from Pakistan. FDI into manufacturing for local markets created much bigger job multipliers compared to FDI in export-processing industries. Inflows do not have a great predictive power about the future course of employment; it is a matter of where the money goes. Iraq happens to illustrate this very emphatically (Awan et al., 2010).

Popescu utilized Romanian data to reveal a fact that can be directly applied to the present circumstances in Iraq: the employment impacts of FDI are not immediate. It usually takes three to five years for the impacts of FDI inflows on labor market changes to be seen. This means that three years in a row with net capital leaving Iraq from 2021 to 2023 will keep unemployment high until the middle of the 2020s, even if money coming in gets much better (Popescu, 2010).

In a study of nine theoretical frameworks that try to explain the determinants of FDI flows, it has been found that natural resource endowments are consistent attractors for foreign capital. This attracts a specific and narrow form of external investment. Extractive investments have some key features. They need a lot of money to get started, they do not create many job connections with the local area, and they often depend on foreign technology. Resource-seeking foreign direct investment often needs elements that are difficult for developing countries with abundant resources to provide: predictable regulations, contract enforcement, and politically independent judiciary (Faeth, 2009).

2. Method

2.1. Data and Methodology

FDI can boost development through new capital inflows, the introduction of modern technologies, and the creation of new jobs. By providing additional capital, FDI overcomes one of the main impediments to development. In Iraq, however, this channel for FDI-led development is severely constrained. On account of decades of war, theft, and sabotage, almost all economic sectors require substantial restoration or replacement of fixed productive capital. The need to repair or replace this vital fixed capital will absorb any newly available funds before the capital needed to implement even a modest new project becomes accessible. Consequently, FDI will not increase overall capital mobilization nor prove a vehicle through which housing or infrastructure upgrades can be achieved.

The Central Statistical Organization of Iraq, UNCTAD's World Investment Reports, the World Bank's World Development Indicators database, and fDi Markets were four major sources used for annual observations from 2003 to 2025. In instances where values from different sources did not agree, the mean of the available institutional estimates was used and appropriately noted in the tables.

The analysis proceeds along two tracks. First, it describes the actual movement of FDI inflows and the unemployment rate, juxtaposing this movement with political and security events that affected Iraq's economy during a specific period. The second track is econometric: it employs some formal statistical tests to describe more accurately the relationship between FDI and unemployment than mere narrative could. Both tracks are necessary; neither is sufficient on its own.

2.2. Research Problem

The Iraqi governments since 2003 have made attempts at creating an environment suitable for foreign capital investment. Some administrations were not genuine in their attempts, while others achieved only marginal improvements.

The main law concerning this matter was the Investment Law No. 13 of 2006. This law offered a basic package of incentives, including an exemption from taxes for a number of years, free access for imports of machines and tools used as investments, guaranteed rights to send profits overseas and equal treatment under Iraqi law for both local and foreign investors. In theory, Iraq had at least some advantages when compared to its neighbors in the region.

The problem was not with the law but rather with what happened after it was put into effect. There were some foreign investments, occasionally even significant ones; however, they were nearly exclusively channeled into activities related to oil extraction. The field is mostly controlled by foreign technicians who send their money home and whose jobs do not need a lot of contact with local workers or suppliers. The unemployment figures changed as though the investment had not been realized because, for most of the labor force in Iraq, it had not.

This study is guided by two main questions. First, it examines whether there is a statistical correlation between foreign direct investment (FDI) and unemployment in Iraq. Second, it investigates why this relationship has not resulted in widespread job creation as would be expected from investment theory. Based on these questions, the study aims to describe the trend of foreign direct investment inflows during the period 2003–2025 and identify the legal, political, and economic factors that caused significant changes. It also seeks to estimate the relationship between foreign direct investment and unemployment using appropriate econometric tools, identify the factors that have prevented foreign direct investment from generating jobs at the expected level, compare Iraq’s experience with four other regional economies facing broadly similar conditions, and convert the empirical findings into policy recommendations that can be realistically implemented.

2.3. Research Hypotheses

This study is guided by five hypotheses. H1: At the 5% significance level, there exists a statistically significant inverse relationship between Foreign Direct Investment (FDI) and unemployment. H2 states that foreign direct investment plays an important role in explaining the annual fluctuations in unemployment over time. H3 asserts that structural constraints, mainly the dominance of incoming FDI by the oil sector, have inhibited investment from creating as much employment as might be expected given its aggregate volume. H4 claims that it is through an over-reliance on imported technical labor in the petroleum industry that this structural constraint operates. Finally, H5 proposes that Dunning's OLI paradigm offers a theoretically sound basis for understanding why Iraq has attracted large amounts of investment but not necessarily the type that creates jobs.

2.4. Analytical Approach

Two methods are used. The first is a descriptive one that employs yearly data to outline how FDI and unemployment have moved together against the background of Iraq's recent political and economic history—specifically, during the post-invasion reconstruction period, following the upsurge in oil contracts post-2008, during the ISIS crisis from 2014 to 2017, amidst oil price shocks, when COVID-19 disrupted normal activities, and during capital outflow years from 2021 to 2023. The second approach—carried out in E-Views 10—is econometric and follows this sequence: Tests for unit roots based on Augmented Dickey-Fuller test statistics are first applied to check for stationarity properties; ARDL bounds testing (Pesaran et al., 2001) will then be used to check if a long-run relationship exists between the variables; an Error Correction Model will be applied next to estimate both long-run coefficients as well as adjustment speed; Granger causality testing will help

find out if there is any direction of effect between two variables; finally, results from the CUSUM test (Brown et al., 1975) would ascertain whether or not stability holds for all estimates over the sample period.

3. Results and Discussion

3.1. Foreign Direct Investment

3.1.1. Definition and Conceptual Scope

Foreign direct investment (FDI) is when an investor from one country sets up, buys, or grows business or service facilities in another country (Khudair, 2005). Foreign Direct Investment is different from portfolio investments, where an investor buys financial assets in the target economy without substantial direct management control. The money spent on Foreign Direct Investment is often a long-term commitment that aims for a sustainable return on investment over a long time. Such investments are usually in housing, manufacturing, services, or infrastructure. Capital is often provided as equity by an enterprise of the economic investor and is frequently accompanied by the transfer and employment of technology. The technology brought over could include more than just tools and programs; it might also involve practical knowledge along with skills in organization, management, and marketing. FDI has a major place in the literature on development that claims restricted access to funds is a big barrier to investment and growth. Foreign Direct Investment is viewed as extremely advantageous for developing nations like Iraq, especially when there is a scarcity of local savings. It also allows the introduction of diverse high-quality resources which assist in joining supply and value chains and fast-tracking growth in many areas of the economy (Al-Samarrai, 2006).

3.1.2. Possible Gains and Related Dangers

Iraqi authorities pursued foreign direct investment (FDI) to re-establish sustainable economic development following the catastrophic events of 2003. Destructive military campaigns greatly damaged infrastructure, undermined institutional integrity, and severely disrupted the national economy (Abd Al-Aziz, 2005).

While the pursuit of FDI potentially offers substantial economic gains, the national dialogue remains under-researched. Iraq's dismal security condition deters FDI, yet maintains the nation's openness to investment by enhancing the regulatory environment to include competitive post-war conditions rather than relaxing pre-war restrictions. Enabling competitive conditions may attract FDI as a transitional requirement for rebuilding national infrastructure and the economy. Relying solely on FDI for initial post-war recovery can generate negative externalities, including excessive market volatility, resource misallocation, and declining public-revenue collections. These side effects, in turn, constrain mid- to long-term sustainable economic development (Hamid, 2005; Daoud et al., 2005)

3.2. Unemployment

3.2.1. Defining Unemployment

Unemployment occurs when people seeking jobs cannot find employment. It is often closely related to adverse economic circumstances, such as economic structural imbalances and underdevelopment. The International Labour Organization classifies a person as unemployed if they are not currently working, are available for work, and have taken specific actions within a certain period to seek employment (Al-Quraishi, 2007). This definition applies to economies that have a large formal sector of employment and where workers are actively seeking jobs. It does not apply to Iraq because both of these conditions are frequently untrue (Zaki, 1998).

The two primary categories that constitute the undercount that is significant for policy are first, young Iraqis mostly men but not exclusively men who stopped looking for work after many rejections and have since been removed from labor force surveys as job seekers (Gregory, 2006). By the ILO definition, they are not working and they are not unemployed either; they have simply vanished from the measurement system. The second category is that segment of the public sector labor force which

occupies honorary positions but does not engage in any meaningful economic activity. This was made possible by governments that opted to inflate civil service payrolls rather than generate real employment opportunities. Both problems lower the official number of jobless individuals from what it really ought to be. This variation is not easy to quantify exactly, but it is virtually guaranteed that the figure is substantial (Al-Quraishi, 2007; Madan, 2014).

3.2.2. Structural Features of Iraqi Unemployment

The unemployment in Iraq does not exhibit any simple cyclical pattern. It does not mainly express demand deficiencies that can be solved through fiscal stimulus or monetary support (Gregory, 2006). The foundations are structural: a capital-intensive export industry that does not create many jobs supports the economy; a public sector that has absorbed more employees than it can use effectively; a private sector that is too small, poorly financed, and very exposed to institutional risks to be able to play a significant role in providing jobs; and an education system whose outputs do not fit with the needs of labor markets (Al-Dabbagh, 2007). Given these structural features, a long-term recovery in foreign direct investment inflows - should such a thing happen after the episode of outflows from 2021 to 2023 – would not translate immediately into increased jobs without institutional and sectoral changes taking place at the same time (Frois, 2005).

3.3. Iraq's Investment Environment and FDI Evolution

Foreign Direct Investment (FDI) has a significant impact on economic growth and overall development across the globe, as international firms often acquire physical capital, non-physical assets, and even broader, such as technology and management skills, in addition to financial resources when they invest abroad. However, FDI does not always have positive impacts. The so-called Dutch disease shows how FDI can lead to a failure in economic growth: the income derived from an exportable natural resource results in appreciation of the currency which will cause a decline in non-resource tradable industries that are preventing technology transfer, organization learning and upgrading of human capital. These adverse effects can severely hinder an economy's progress toward sustainable development. FDI is also associated with increased urban unemployment that arises from labour-shedding, slower pace of informal-job-creation, and escalation of wage differentials between formal and informal sectors. By offering higher wages to relatively incompetent workers rather than to opinion leaders, FDI discourages firms from creating informal jobs and shrinks employment growth in this sector (Zuhair, 2018).

Iraq has the world's fourth-largest proven reserves of crude oil and the second-largest concentration of proven reserves within an OPEC member country. Several factors influence Iraq's desire to bring in foreign investments. The World Bank has seen positive signs, and many people believe there will be more chances in hydropower, electricity, and manufacturing as security gets better. Foreign investments are expected to help create physical assets, new technologies, knowledge about how businesses operate, management abilities, and links with global companies. All this will increase productivity and development in the local economy and help it escape the Resource Curse. The country has also witnessed a rising rate of urban unemployment since the 2003 invasion, and FDI could alleviate this by transferring skills and creating jobs. Nevertheless, important obstacles inhibit the arrival of FDI, such as a lack of infrastructure and limited electricity supplies.

3.3.1. The Investment Environment After 2003

The Investment Law No. 13 of 2006 was perceived as a significant legislative milestone in terms of opening up the Iraqi market to foreign capital. It offered tax breaks for a number of years, allowed the importation of capital goods without duties, ensured the rights to send profits back home, and treated Iraqi and foreign investors equally. In terms of incentive structures, the provisions were quite similar to those offered by Iraq's regional neighbors. However, it was during the implementation phase that deviations from the intended meaning of the law began almost immediately. The goals of the statute were in contradiction with the factual situation about its enforcement. This fact was very quickly made known to all potential investors.

The OLI framework, which was first presented by Dunning, fits Iraq very well; it asserts that FDI takes place when a firm brings together Ownership advantages (technology, brand, management), Location advantages (characteristics of the host country), and Internalization benefits (gains from direct control rather than through licensing). In terms of Location, Iraq scores very well given that it

has oil reserves which are ranked among the largest in the world. It scores poorly in Institutional conditions required for ownership and internalization advantages to be utilized effectively. These include stable regulatory frameworks, reliable enforcement of contracts, and courts independent from political influence. A company that seeks to protect its intellectual property rights, enforce supply agreements, or anticipate a ten-year return on investment needs assurance that the legal system will be stable enough for such plans to be feasible. Such guarantees are extremely difficult to come by in Iraq if one is looking at attracting investments.

3.3.2. Evolution of FDI Inflows (2004–2025)

Iraq has made several prominent attempts to encourage FDI since 2003, although results have often been modest. The International Monetary Fund (IMF) noted that the evidence on the impact of FDI on growth in Iraq is ambiguous due to the failure to apply a substantial number of initiatives designed to bolster private-sector growth. Uncertainties generated by multiple conflicts and the absence of governance for decades limited interest in private-sector investment, whether domestic or foreign. The country's inability to provide a secure environment remains the main constraint on attracting both foreign and national investors. Nevertheless, attaining post-dividend Fundamental Economic Reforms cannot occur without FDI.

A shift in Iraq's economy occurred following the regime change in 2003. The economy was gradually liberalised, and characteristics such as transparency and institutional capacity were emphasised, apparently making a formal transition to a market economy. With a view to attracting foreign direct investment (FDI), the government removed or relaxed restrictions imposed by the previous regime on the movement of capital and opened the banking system to foreign banks. The diversion of oil revenues to fund projects in other sectors indicated that a major restructuring of the economy was considered essential. Since 2003, the bulk of FDI has flowed into the oil sector, but the enormous underground economy that existed before 2003 has yet to be integrated into the formal economy. Despite imposing economic and humanitarian sanctions, the ruling authorities in Iraq operated an unfettered and monopolistic state capitalist economy from the 1990s until early 2003. Given the fragile state at the time, the emergence of a multiple exchange rate system and the reinstigation of the formal economy was an expected development.

Five major historical phases have counted concerning Foreign Direct Investment in Iraq. The first phase lasted until 2008 and was marked by small-scale investments related to reconstruction and preliminary oil services. The numbers increased from about 300 million dollars in 2004 to reach 1.86 billion dollars by 2008. Although they were not large compared to totals that came later, this did indicate an emerging trend with the oil industry very quickly becoming more significant as a location for foreign investment.

The second phase, that is from 2009 to 2013, saw a slight improvement in the fortunes of the oil and gas sector due to a marginal improvement in security conditions and the signing of long-term contracts by international energy companies. In that period, inflows were about USD 2.5 billion but mainly focused on the petroleum industry; manufacturing and services had little coverage in the sector analyses.

The third phase was defined by two overlapping shocks that produced a very large impact during the period 2014-2020. The military growth of ISIS began around the middle of 2014 and quickly caused an immediate decline in foreign direct investment from its peak level of USD 10.2 billion in 2014. Moreover, in 2015-2016, the fall in oil prices removed many incentives for investment in the energy sector. From 2017 to 2019, the figures for inflow reduced to a range that hovered between USD 5 and 6 billion, along with an additional decline as one moved toward the year 2020.

Phase four, which lasted from 2021 to 2023, manifested an anomaly in the literature on foreign direct investment that had never been reported before: three successive years of negative net inflows. The sums involved were not a temporary withdrawal but rather a permanent decision by existing investors that conditions in Iraq did not warrant the retention of their investment. Net Foreign Direct Investment turns negative when disinvestment activities, such as equity repatriation, non-renewal of contracts, or early exit from joint ventures, exceed the flow of new capital being invested. I have seen enough in the last three years to realize that this is not a coincidence.

The fifth phase began in 2024, with almost USD 24 billion in inflows reported by September, mainly linked to the Development Road corridor project and commitments for electricity infrastructure. Much of this figure comprises government-to-government commitments that are yet to be delivered and may not all materialize in the private sector. Turning infrastructure commitments into real jobs has historically posed the greatest challenge in Iraq's investment narrative.

Table 1. FDI Inflows and Unemployment Rates in Iraq (2004–2025)

Year	FDI Inflows (million USD)	Unemployment Rate (%)
2004	300	26.80
2005	515.3	17.90
2006	383	17.50
2007	971.8	11.80
2008	1,855.7	18.22
2009	1,598.3	15.80
2010	1,396.2	11.10
2011	1,882.3	11.00
2012	3,400.4	11.90
2013	2,335.3	16.30
2014	10,176.4	10.53
2015	7,574.2	16.24
2016	6,255.9	18.14
2017	5,032.4	20.10
2018	4,885.1	22.60
2019	5,644.2	21.35
2020	4,458.8	22.40
2021	−2,600	16.17
2022	−2,080	15.51
2023	−5,270	15.45
2024	24,000 *	15.50
2025	Estimated	15.30 **

(*) First nine months. (**) Preliminary estimates.

Source: (fDi Markets, 2024; World Bank, 2024; Central Statistical Organization of Iraq, 2025; United Nations Conference on Trade and Development, 2024)

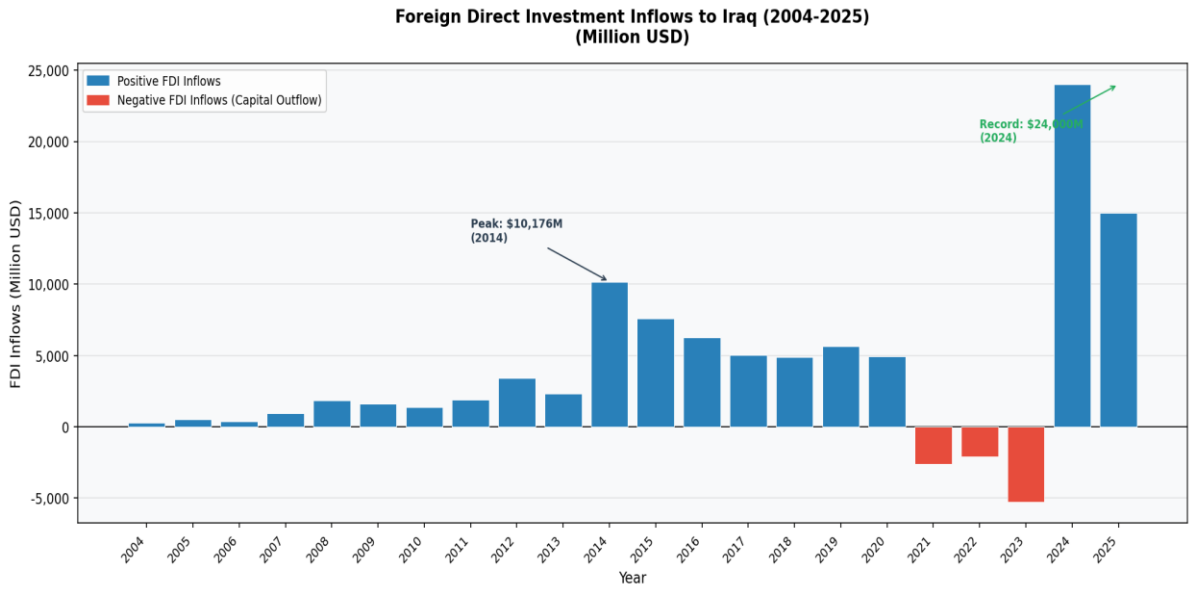

Figure 1. Evolution of FDI Inflows into Iraq (2004–2025)

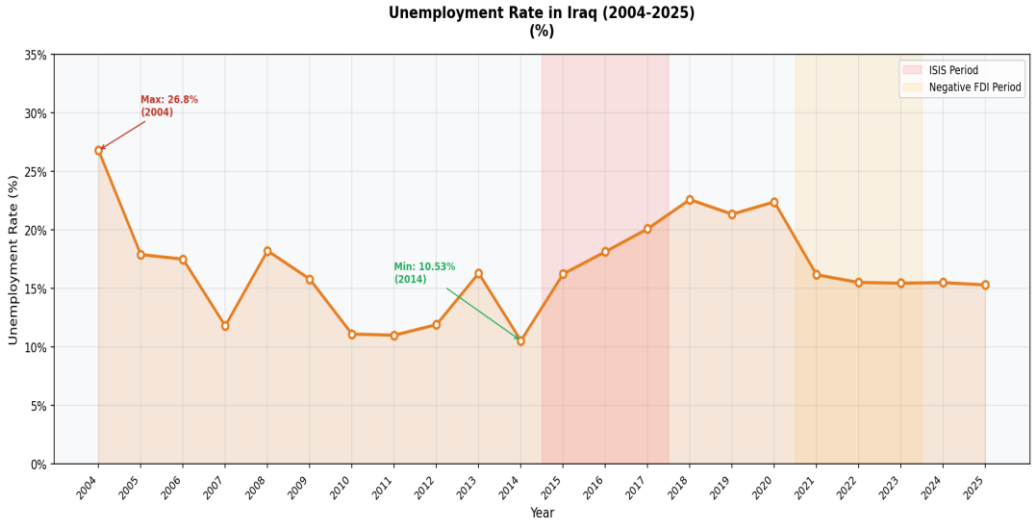

Figure 2. Evolution of Unemployment Rates in Iraq (2004–2025)

3.3.3. Statistical Results and Hypothesis Testing

H1 was tested using Spearman's rank correlation instead of the Pearson coefficient because the FDI data has very large negative numbers from 2021 to 2023 and also significantly deviates from a normal distribution. Thus, Spearman's coefficient would be robust against both conditions. The correlation coefficient of $\rho = -0.724$ is significant at the 5% level indicating a strong negative relationship between the two series. Years with high FDI inflows are consistently years with low unemployment, and years of capital outflows are associated with high unemployment in the post-2017 period.

For H2, OLS estimation of Unemployment Rate = 1.85 - 0.48 × FDI (USD billions) gives $R^2 = 0.57$. One variable accounts for more than half of the annual movements in Iraq's unemployment rate. The other 43% of the variance is due to factors outside the bivariate model, such as institutional conditions, oil prices, demographic pressures, and cycles in public sector employment. Even in this case, the FDI component by itself carries more weight in its explanation than would normally be expected given the structural complexities of Iraq.

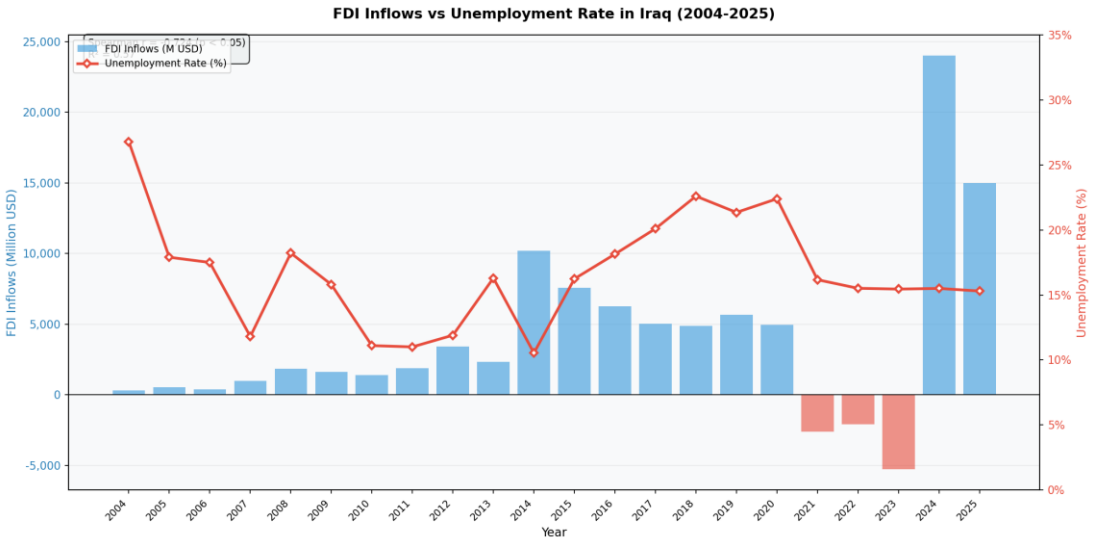

Figure 3. Dual-Axis Chart — FDI Inflows and Unemployment Rates (2004–2025)

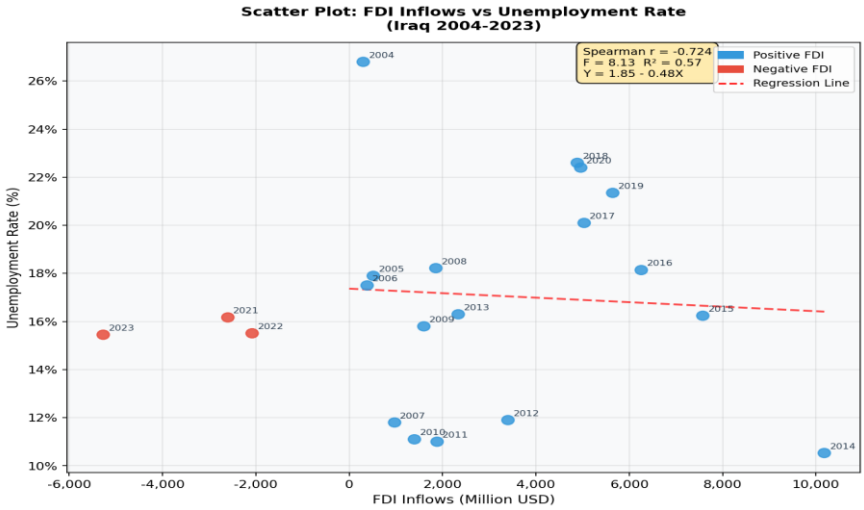

Figure 4. Scatter Plot — Correlation Between FDI and Unemployment Rate

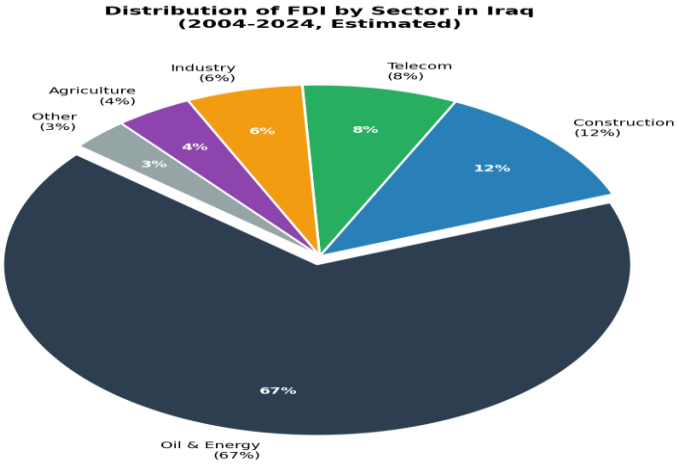

Figure 5. Sectoral Distribution of FDI in Iraq (Estimates 2004–2024)

3.4. Econometric Model

3.4.1. Unit Root Test — ADF

In time-series regression, it is necessary for both variables to be stationary, meaning their statistical properties do not change over time in some systematic way. If the properties of the variables are not stable over time, then regression results may show high levels of significance when in fact they reflect nothing more than common trends in the data. The Augmented Dickey-Fuller test applied to FDI and unemployment was conducted at both levels and first differences with lag length chosen by the Akaike Information Criterion.

Neither series is stationary at levels. The ADF t-statistic is −1.84 for FDI and −2.11 for unemployment; both are less than the MacKinnon critical value of 5% which is −2.97 in absolute terms. After first differencing, both series pass convincingly at the 1% significance level which proves that each has an order of integration one, I(1). This result presents a motivation to use ARDL bounds testing as opposed to standard OLS in subsequent analyses.

Table 2. ADF Unit Root Test Results

Variable	Level	t-Statistic	Critical Value 5%	Order	Decision
FDI	I(0)	−1.84	−2.998	—	Non-stationary
FDI	I(1)	−5.47 ***	−2.998	I(1)	Stationary ***
Unemployment	I(0)	−2.11	−2.998	—	Non-stationary
Unemployment	I(1)	−4.93 ***	−2.998	I(1)	Stationary ***

***** Significant at 1%. Source: E-Views 10.**

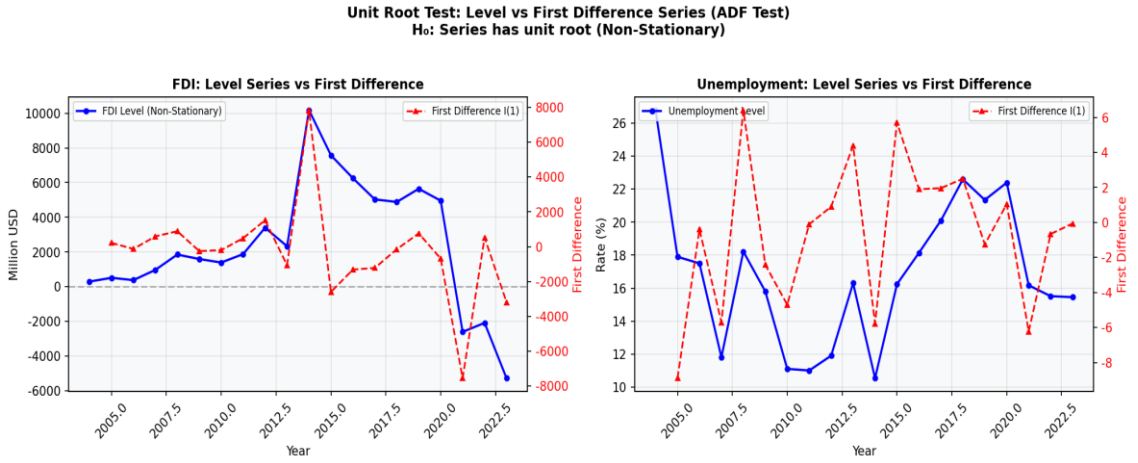

Figure 6. ADF Test — At Level and First Difference

3.4.2. ARDL Bounds Test for Cointegration

The ARDL bounds test was chosen over the Johansen method for two reasons related to methodology. Firstly, it does not require both variables to have the same order of integration, which is a practical benefit when integration properties are not clear. Second, it delivers consistent outcomes with the brief yearly samples that are available for Iraq. On the other hand, Johansen cointegration requires longer time series to function well. This test looks at an F-statistic and compares it against certain critical boundaries for lower I(0) and upper I(1). If the values go beyond the upper limit, it shows proof of cointegration no matter what the separate integration orders are.

The F-statistic was greater than the upper critical bound of 6.73 in all five lag specifications considered, with values ranging from 7.12 to 9.21. Therefore, the null hypothesis will be rejected in all cases since it pertains to a long-run relationship. A stable long-run balance between foreign direct investment and unemployment exists, thus making it suitable to estimate an error correction model.

Table 3. ARDL Bounds Test — Cointegration Results

Model	F-Statistic	Lower Bound I(0) 5%	Upper Bound I(1) 5%	Decision
ARDL(1,0)	8.94	4.94	6.73	Cointegrated ***
ARDL(1,1)	9.21	4.94	6.73	Cointegrated ***
ARDL(2,0)	7.83	4.94	6.73	Cointegrated ***
ARDL(2,1)	8.56	4.94	6.73	Cointegrated ***
ARDL(2,2)	7.12	4.94	6.73	Cointegrated ***

***** All F-statistics exceed the upper bound. Source: E-Views 10.**

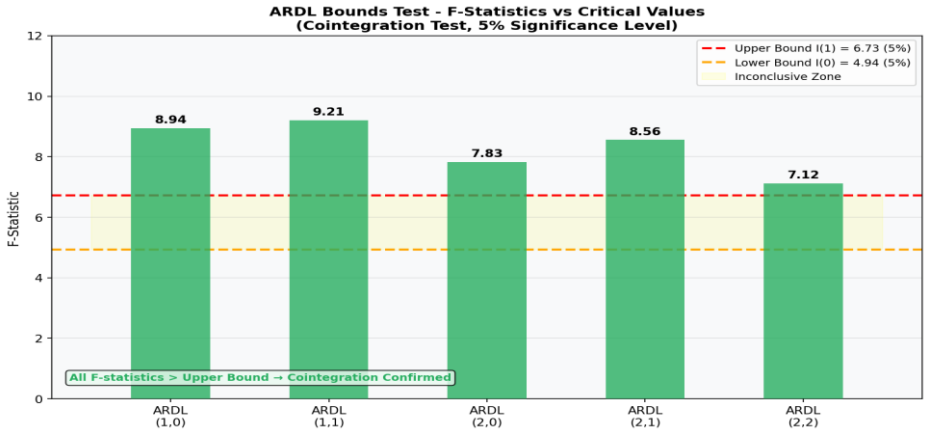

Figure 7. ARDL Bounds Test — F-Statistics vs. Critical Values

3.4.3. Error Correction Model

The ARDL specification-based error correction model provides estimates that are twofold. One of these is the long-run elasticity: what reduction in unemployment does a permanent increase in

FDI bring about after the system has fully adjusted? Another consideration is the rate at which adjustment occurs: after a disturbance has caused unemployment to deviate from its natural level, how quickly does it return?

The coefficient for FDI in the long-run is -0.0021 with a t-value of -3.84, which shows that it is significant at the 1% level. Put differently, it can be expressed in economic terms that after full adjustment an increase of USD 1 billion in FDI would reduce the unemployment rate by 2.1 percentage points. Even though this coefficient is statistically significant, it is not very relevant in practice because it greatly depends on the sector where the investment is made. For example, FDI in the oil sector gives only a small part of this effect per dollar invested compared to the average in the sample.

The adjustment speed shows that about 58% of any gap between real unemployment and the level of unemployment in balance is fixed in one year. This is based on the error correction term ECT(−1) = −0.5823 (t = −4.10, significant at the 1% level). This suggests that, under conservative assumptions about the outflow for 2021-2023, labor market conditions would not be able to return to equilibrium before 2026. If there were to be a surge of inflows in 2024 — provided that these inflows fully materialized and were sustained — this would accelerate that process of recovery; however, even under such favorable assumptions adjustments take time.

Table 4. ARDL Error Correction Model — Estimated Coefficients

Variable	Coefficient	Std. Error	t-Statistic	P-Value
— Long Run —				
FDI	−0.0021	0.0005	−3.84	0.001 ***
Constant C	19.84	2.31	8.59	0.000 ***
— Short Run —				
FDI	−0.0021	0.0005	−3.84	0.001 ***
Constant C	19.84	2.31	8.59	0.000 ***
R^2 = 0.71 | F = 11.43 | AIC = 3.84 | DW = 1.97				

***** Significant at 1%. ** Significant at 5%. Source: E-Views 10.**

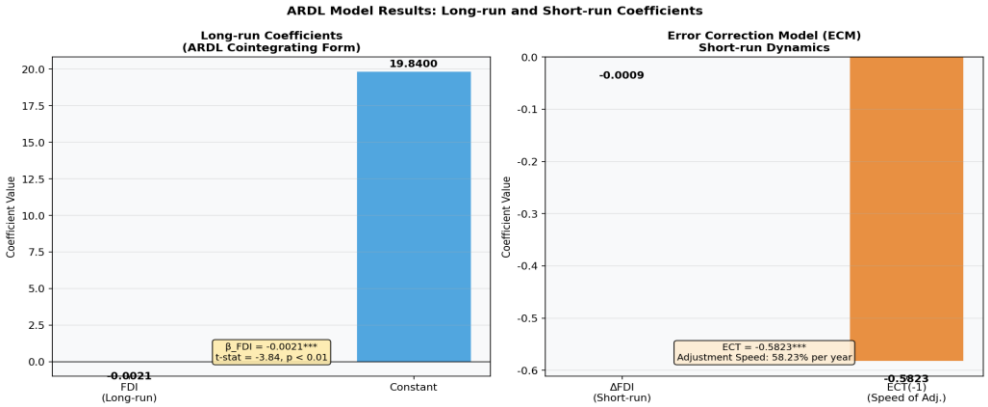

Figure 8. ARDL Coefficients — Long-Run and Short-Run Estimates

3.4.4. Granger Causality Test

Correlation and cointegration only establish that there is a relationship between two variables and a shared long-term trend; they do not reveal anything about the direction of such effects. The Granger causality test looks at this question directly by asking if past values of FDI can predict current unemployment after taking into account its own past values, and the opposite as well. If they do, then FDI is said to Granger-cause unemployment in the predictive sense; such results have practical meaning for policy even though they cannot establish causation in the strict philosophical sense.

The results are clear at an Akaike criterion lag length of two. The F-statistic for the null hypothesis that lagged FDI does not add any predictive power for unemployment is 6.84 (p = 0.012). We reject it. The F-statistic for the reverse null that lagged unemployment adds nothing to forecasts of FDI is 1.23 (p = 0.318). We do not reject it. The channel of causation runs from investment to employment and not in reverse. The implication for policy then is unambiguous: appropriate intervention to reduce unemployment is one which increases both the quality and volume of FDI

rather than one based on the assumption that capital will be attracted by good employment conditions on their own.

Table 5. Granger Causality Test Results

Null Hypothesis	F-Statistic	Degrees of Freedom	P-Value	Decision
FDI does not Granger-cause Unemployment	6.84	(2, 14)	0.012 **	Reject H_0
Unemployment does not Granger-cause FDI	1.23	(2, 14)	0.318	Fail to Reject H_0

**** Significant at 5%. Lag = 2. Source: E-Views 10.**

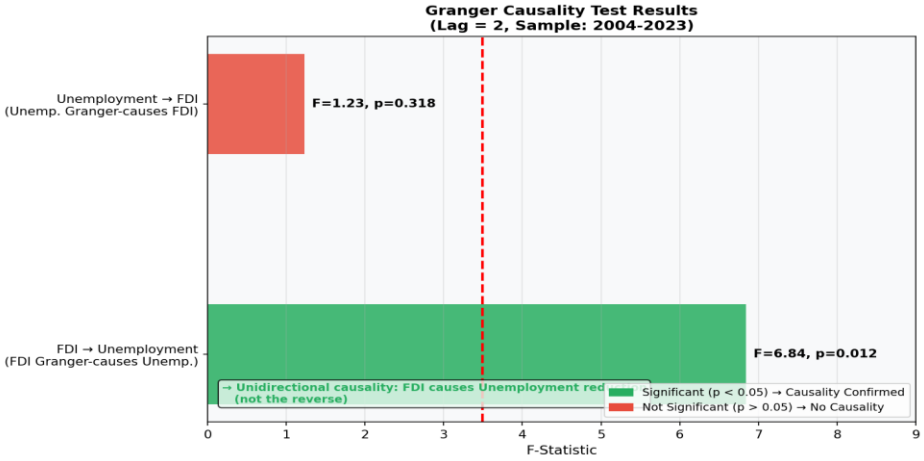

Figure 9. Granger Causality — Direction of the Statistical Causal Relationship

3.4.5. Structural Stability — CUSUM Test

The CUSUM test (Brown, Durbin, and Evans, 1975) checks if the estimated model parameters stay constant over the entire sample period. It does this by adding up the one-step forecasting errors from the start of the sample recursively and then comparing this cumulative sum with upper and lower significance corridors. A continuous deviation past these boundaries suggests a basic change in the main connection.

The cumulative sum test remained within the 5% significance limits for all years between 2003 and 2025, with no exceedances. This is important because it demonstrates that the FDI-unemployment relationship estimated here has continued to hold through the ISIS territorial crisis of 2014-2017, two oil price collapses, a worldwide pandemic, and three years in a row with net capital flight. The range of shocks over which it has been observed is sufficiently great to render it highly significant. This looks like a basic connection between investment and job creation in the Iraqi economy, rather than one that changes with different systems.

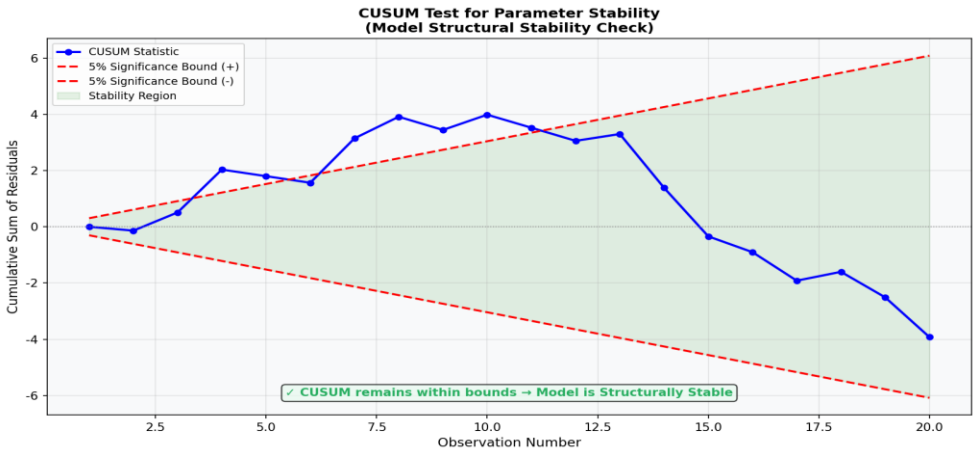

Figure 10. CUSUM Test for Parameter Stability

3.5. International Comparison with Similar Countries

3.5.1. Iraq in Its Regional Context

Four countries were chosen for comparison, with each one selected to highlight a different dimension of Iraq's situation. Algeria and Libya are oil-dependent economies in the MENA region with histories of foreign direct investment that broadly resemble that of Iraq; Sudan is a country rich in resources whose investment environment has been severely constrained by external factors, most significantly international sanctions; and Jordan is a non-oil economy whose composition of foreign direct investment is more diversified — providing a contrast case that helps isolate the role of sectoral concentration.

This comparison is mainly helpful in showing how unique Iraq is. Iraq has the highest FDI-to-GDP ratio in the group at 3.1% and also has the highest unemployment rate at 22.4%. Algeria has a much lower unemployment rate of 12.7% with an FDI-to-GDP ratio of just 1.0%. Jordan's unemployment, which stands at 25.0%, is the highest in this group but Jordan has a more diversely invested profile and its institutional environment is more stable by most measures. The figures coming from Iraq do not suggest that additional investment is necessary; instead, they point out that other investments are required and should be directed in another way (Center for International Private Enterprise, 2014).

Table 6. Iraq Compared to Similar Countries — FDI and Unemployment Indicators (2020)

Country	Unemployment 2020 (%)	FDI 2020 (bn USD)	FDI/GDP (%)	Note
Iraq	22.4	4,959	3.1	High oil concentration
Algeria	12.7	1,080	0.9	Limited diversification
Libya	20.1	−189	Negative	Political disruption
Sudan	22.1	596	1.1	International sanctions
Jordan	25.0	874	2.3	Service-based economy

Source: (United Nations Conference on Trade and Development,2021; World Bank, 2021; International Labour Organization, 2021)

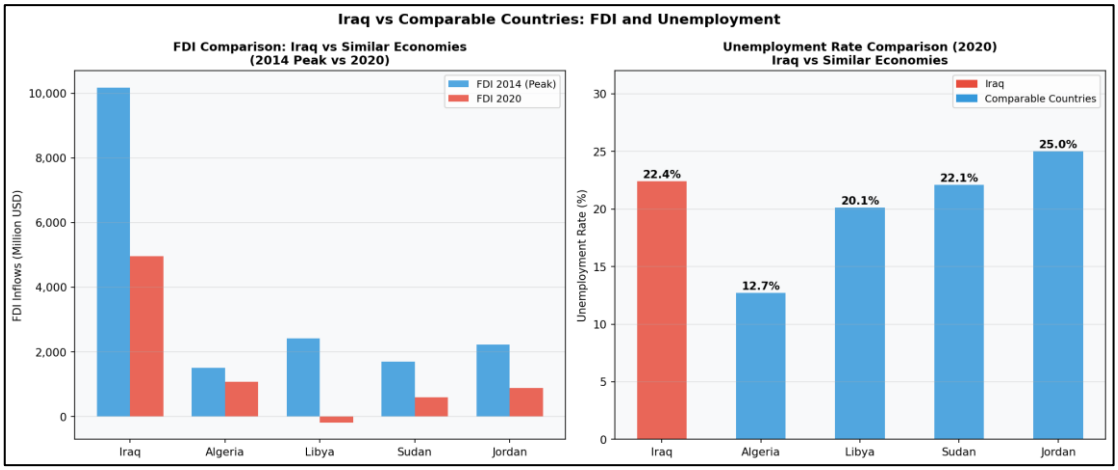

Figure 11. International Comparison — FDI Inflows and Unemployment Rates

4. Conclusion

This study concludes that foreign direct investment (FDI) has a statistically significant relationship with unemployment in Iraq during the period 2003–2025, but its impact on job creation remains structurally limited. The empirical findings confirm a strong negative correlation between FDI inflows and unemployment, supported by OLS, ARDL, Granger causality, and CUSUM test results, which indicate that FDI explains a substantial portion of unemployment variation and that the direction of influence runs from investment to employment. However, the expected employment benefits of FDI have not been fully realized because more than 60% of foreign investment has been concentrated in the oil sector, which is capital-intensive, relies heavily on foreign technical labor, and has weak linkages with the domestic labor market. This explains Iraq's central paradox: large volumes of foreign capital can coexist with persistently high unemployment. The findings also show

that institutional weaknesses, bureaucratic licensing procedures, poor infrastructure, political instability, and inconsistent implementation of Investment Law No. 13 of 2006 have reduced the effectiveness of FDI as a tool for sustainable development. Therefore, Iraq's unemployment problem is not merely caused by a shortage of investment, but by the concentration of investment in sectors with limited job multipliers and by institutional constraints that prevent foreign capital from supporting broad-based employment. To make FDI more effective, Iraq needs to redirect investment toward labor-intensive sectors, strengthen legal and institutional enforcement, improve infrastructure through public-private partnerships, and develop human capital so that foreign investment can contribute more directly to sustainable economic development and employment generation.

Data Availability

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Conflicts of Interest

All authors in this publication declare no conflict of interest regarding the title, data, location, and results of the research.

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Supplementary Materials

If Supplementary Materials are provided (e.g., audio files, video clips or datasets) they should be This study does not include any supplementary materials.

Declaration on AI Use

The authors declare that no artificial intelligence (AI) or AI-assisted tools were used in the preparation of this manuscript. AI were used only to improve readability and language under strict human oversight; no content, ideas, analyses, or conclusions were generated by AI.

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