

# The relationship between IFRS adoption and foreign direct investments in Gulf Cooperation Council countries

## Związek między przyjęciem MSSF a bezpośrednimi inwestycjami zagranicznymi w krajach Rady Współpracy Zatoki Perskiej

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### Abstract

**Purpose:** This paper investigates the relationship between International Financial Reporting Standards (IFRS) adoption and Foreign Direct Investments (FDI) inflows in a sample of Gulf Cooperation Council (GCC) countries, namely Kuwait, Qatar, UAE, and Saudi Arabia over the period standing between 1990 and 2020.

**Methodology/approach:** This study implements a statistical analysis, starting with a panel correlation matrix and then a panel unit root test to identify the integrating properties of variables. The Pedroni panel co-integration approach tests co-integration among variables, and the instrumental Generalized Method of Moments (GMM) estimation technique identifies the relationship among variables and their significance.

**Findings:** The results imply that only Gross Domestic Product (GDP) *per capita*, exchange rate and trade enhance FDI inflows in the studied countries. Contrary to our expectations, the IFRS was found to be insignificant on FDI along with economic control variables.


**Originality/value:** Using multiple control variables, this study provides original empirical evidence and statistical analysis on the effect of IFRS adoption on FDI inflows in the GCC area.


**Keywords:** IFRS adoption, foreign direct investment (FDI), GCC countries, emerging economies, co-integration.

### Streszczenie

**Cel:** Celem artykułu jest zbadanie związku między przyjęciem MSSF a napływem bezpośrednich inwestycji zagranicznych (BIZ) na próbie krajów Rady Współpracy Zatoki Perskiej (GCC), tj. Arabii Saudyjskiej, Kuwejtu, Kataru oraz Zjednoczonych Emiratów Arabskich w latach 1990–2020.

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**Metodyka/podejście badawcze:** W artykule zastosowano analizę statystyczną opartą na macierzy korelacji panelowej i panelowego testu pierwiastka jednostkowego w celu określenia właściwości zintegrowania zmiennych. Wykorzystano również podejście Pedroniego do testowania kointegracji między zmiennymi oraz uogólnioną metodę momentów (estymacja GMM) w celu określenia istotności związku między zmiennymi.

**Wyniki:** Rezultaty badań wskazują, że tylko PKB *per capita*, kurs walutowy i handel zwiększają napływ BZI w badanych krajach. Przeciwnie do naszych oczekiwań, przyjęcie MSSF okazało się nieistotnym czynnikiem wpływającym na BZI wraz z innymi ekonomicznymi zmiennymi kontrolnymi.

**Oryginalność/wartość:** Badanie dostarcza dowodów empirycznych i analizy statystycznej związku przyjęcia MSSF z napływem BZI w krajach GCC z użyciem licznych zmiennych kontrolnych.

**Słowa kluczowe:** przyjęcie MSSF, bezpośrednie inwestycje zagraniczne, kraje Rady Współpracy Zatoki Perskiej, wschodzące gospodarki, kointegracja.

## Introduction

The adoption of International Financial Reporting Standards (IFRS) has significantly impacted the capital markets and economic performance of adopting countries through its generally positive effect on financial information, which is highly important to investors for their effective investment decisions. Although IFRS are perceived as a set of high-quality standards (Leuz, 2003), both the empirical evidence and the theoretical framework of the consequences of IFRS adoption remain controversial (Toumeh, Yehya, 2019; Soderstorm, Sun, 2007; Brushman, Smith, 2001). Beneish and Yohn (2008) and Beneish et al. (2015) highlight three main risks that are likely to impact the benefits of IFRS adoption: (1) the information processing costs, (2) the uncertainty concerning the quality of financial reporting, and (3) uncertainty regarding the distribution of future cash flows.

Moving to another perspective, the critical propulsion of a country's development, especially for developing countries, is Foreign Direct Investments (FDI). Since the 1990s, FDI has been the preferred method for financial resources over loans and other financial means (OECD, 2014). According to the World Bank Organization, FDI, by definition, implies "direct investment equity flows in the reporting economy. It is the sum of equity capital, reinvestment of earnings, and other capital". It is also classified under the cross-border investment category, where an investor in country A establishes a lasting and significant interest in an enterprise in country B (World Bank, 2022).

Several studies have investigated the association between IFRS adoption and FDI in developed countries, some by conducting statics panel and Ordinary Least Squares (OLS) estimation techniques, e.g. Lasmin (2012), Gordon et al. (2012), Lungu et al. (2017), and Daskalopoulos et al. (2016), and some by employing theoretical relationships, e.g., Procházka and Procházková (2011). This paper attempts to fill the gap in the macroeconomic implications of IFRS adoption in emerging economies, particularly on a sample of Middle East and North Africa (MENA) region countries forming the Gulf Cooperation Council (GCC).

The GCC includes six countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE). These countries are categorised as developing countries located in the MENA region. This political alliance was established in Riyadh, Saudi Arabia, in 1981, to expand the domestic market, trade, and attract FDI. Figure 1 below plots the flow of FDI for the period under study (1990–2020). GCC countries are rich in gas and oil; Saudi Arabia is ranked second worldwide in terms of oil reserves. In line with their vision to compete in international markets and attract more FDI, all GCC countries are now IFRS adopters. Therefore, identifying the impact of IFRS adoption on FDI inflows in GCC countries is crucial to assess the economic outcomes of the adoption in the region. The insights may also help standard setters and regulatory bodies assess the consequence of this adoption.

Due to the availability of data, this study focuses on four of the largest GCC countries: Kuwait, Qatar, United Arab Emirates, and Saudi Arabia between 1990 and 2020. To identify the impact of IFRS adoption on FDI inflows, consecutive analyses will be performed. The first step plots the descriptive statistics of the variables. The next phase will be the panel unit root test to identify the existence or absence of a unit root among the series; specifically, the null hypothesis of the panel unit root test is the existence of a unit root among the series or the homogeneity of the series, which is a drawback of the study. For this, the data should be stationary, and the absence of a unit root is advisable. Once the integration is met for all variables and the level of integration for each variable is identified, the Pedroni panel co-integration technique can be implemented. This approach, introduced by Pedroni (2004), tests the null hypothesis of no co-integration among variables. If the Pedroni test rejects the null hypothesis of no co-integration, then the last step is the Generalized Method of Moments (GMM) instrumental regression, which allows for the consistent estimation of correlated variables to identify the coefficients and their significance.

The results of the statistical analysis led to multiple conclusions. First, only exchange and trade were found to affect FDI inflows positively and significantly in the studied countries. Second, contrary to expectations, gross domestic product *per capita*, which is a measure of a country's prosperity, was found to be significantly but negatively related to FDI. Third, and inconsistent with the previous literature (Lungu et al., 2017; Gordon et al., 2012; Yousefinejad et al., 2018), the results do not support the argument that after the adoption of IFRS, other chosen economic indicators, such as property rights, tax burden and financial freedom, or the natural resources and regulatory quality measures, are significantly related to FDI. In other words, it can be concluded that, together, the IFRS adoption, strong institutional infrastructure, regulatory quality, and the abundance of natural resources may not enhance FDI inflows in the emerging countries under study.

This study contributes to the previous accounting literature on multiple levels. The results may have important economic implications for a better understanding of the business environment in the GCC countries under study as a sample of developing economies and the efforts needed to shape the financial reforms and strengthen the institutional quality to attract more FDI. Therefore, to the best of the authors' knowledge, this paper is one of the few to discuss the impact of IFRS adoption and FDI inflows in the GCC area. Furthermore, this study offers an

original methodological contribution to the macroeconomic effect of the IFRS adoption literature by employing not only the GMM estimation technique but also the control variables used, such as gross domestic product (GDP) indicators, natural resources, trade, regulatory quality, exchange rates and economic freedom indexes, such as property rights, tax burden and financial freedom.

The structure of this paper is organised as follows: The second chapter concentrates on prior studies and hypothesis development. The next section deals with research methodology and describes the sample selection, definition of variables, model specification and estimation technique. The last two chapters present the results of the empirical analysis and conclude, respectively.

## 1. Related literature and hypotheses development

The response to the increased integration of the world capital markets came in the form of International Financial Reporting Standards, a worldwide harmonised set of accounting standards. The objective of the IFRS Foundation is to develop, in the public interest, a single set of high-quality, understandable, and enforceable global accounting standards. Emerging economies are worth special attention as the differences in their institutional environment may shape the structure of financial reporting systems in a significantly different manner than is common for developed countries. According to Trabelsi (2016), IFRS are an essential milestone in promoting the inflow of FDI in emerging economies. Yousefinejad et al. (2018) focus on assessing the short and long-run causal relationship between IFRS and FDI inflows by employing a panel co-integration and causality test in Association of Southeast Asian Nations (ASEAN) countries. The results revealed that adopting IFRS positively affected FDI inflows in the ASEAN countries.

Mameshe and Masood (2021) employed the Autoregressive Distributed Lag (ARDL) modelling approach and the Pooled Mean Group (PMG) estimation method to provide evidence on the impact of IFRS adoption on FDI inflows in GCC countries for 37 years, covering the pre- and post-adoption eras. The results revealed a positive impact in the short run, where FDI inflows increased shortly after IFRS adoption. However, the adoption negatively affected the FDI inflows in the long run. The long-run results are similar to those of Lasmin (2012), who assumes that developing countries do not experience higher FDI inflows and international trade after adopting IFRS. These hypotheses were tested using the OLS estimation, with FDI inflows as the dependent variable and seven independent variables, including IFRS adoption and GDP. The regression results failed to reject the hypotheses. It was concluded that IFRS adoption does not significantly lead to a higher volume of international trade and investment inflows. Following the same estimation technique of Lasmin (2012), Golubeva (2020) analysed the impact of IFRS adoption on FDI and the profitability of foreign investment, more precisely, Swedish FDI, in 73 developed and developing countries. The empirical evidence suggested a positive and significant impact of IFRS adoption on FDI and earnings generated by foreign investments.

Marquez-Ramos (2011) employed the fixed-effects vector decomposition (FEVD) technique to test whether adopting IFRS has benefited European countries in terms of FDI inflows. The results showed that transition European economies witnessed more benefits regarding FDI inflows when adopting IFRS. Siriopoulos et al. (2021) analysed panel data on GCC countries and indicated that standards are a strong determinant that promotes FDI inflows to those countries.

Similarly, Daskalopoulos et al. (2016) employed a dataset of 142 countries, including 31 developed countries and 111 developing countries, with 19 observations for each country. The estimation equation included GDP, GDP *per capita*, exchange rate, interest rate, unemployment rate and some other variables as independent variables, and with FDI inflow as the dependent variable. The results of the panel data regression model indicated that adopting IFRS has a statistically strong and positive impact on FDI inflows in both developed and developing countries.

Ajibade et al. (2019) adopted a pooled ordinary regression to investigate the association between IFRS adoption and FDI inflows in two emerging African countries, Nigeria and Ghana. The independent variables used were IFRS adoption, inflation, exchange rate and political instability, while FDI inflows was set as the dependent variable. The findings suggest a negative and non-significant association between IFRS and FDI in Nigeria, whereas a positive and significant association was uncovered in Ghana. Using a similar approach, Nnadi and Soobaroyen (2015) based their study on a sample of 34 countries. The results of the OLS regression indicated that the full adoption of IFRS standards negatively impacted FDI inflows in African countries.

Efobi et al. (2014) selected 92 countries comprising both developed and developing countries to study the impact of IFRS adoption on FDI taking into consideration macro-economic variables (GDP, inflation rate and exchange rate), structural covariates (trade openness, adult literacy, GDP *per capita*) and institutional measures. The results of the System Generalized Method of Moments (SYS GMM) estimation failed to conclude a positive relationship between IFRS adoption and FDI. Using the same estimation technique, Owusu et al. (2017) reached similar conclusions to Efobi et al. (2014), i.e. that IFRS adoption alone does not affect the FDI inflows based on a sample of 116 developing countries.

Lungu et al. (2017) investigated the impact of IFRS adoption on FDI inflows using a sample of 395 country-year observations, including European and Non-European countries, differentiating between adopters and non-adopters of IFRS. The results suggested that adopters are more likely to benefit from an increase in FDI than non-adopters. On a different scale, Gordon et al. (2012) employed the OLS approach on a panel data set of around 1,300 observations, including 124 developed and developing countries. The regression results provided evidence that IFRS adoption leads to an increase in FDI inflows in developing countries compared with developed ones.

According to Lim (2001), two types of FDI are distinguished according to the purpose and the expected benefits. The first FDI that is seen to serve the local markets is called horizontal FDI, as it involves doubling the plants in foreign locations to expand the market. The benefits of horizontal FDI involve reducing supply and transport costs, and higher competitiveness. The second type of FDI, namely

vertical FDI, involves purchasing the primary raw materials, labour, and commodities of a product from low-cost locations. This type is used when the aim is to minimize production costs. Various studies have identified multiple determinants of FDI, such as: a) economic distance and transport costs, b) size of the host market, c) agglomeration effects, d) factor cost, e) fiscal incentives, f) business climate, and g) trade barriers/openness (Samargandi et al., 2022; Lim, 2001, Aziz and Mishra, 2016).

Based on the literature review and given that making financial information more comparable, transparent, and easily understandable worldwide has substantial consequences on the country's foreign activities (Efobi et al., 2014; Ramos, 2011; Gordon et al., 2012), this study hypothesises that:

**H1:** IFRS adoption has a positive and significant association with foreign direct investment inflows in the GCC countries.

## 2. Research methodology

The research methodology section of this paper illustrates the study research design to identify and examine the macroeconomic impact of IFRS adoption on the FDI inflows by considering four GCC countries (Kuwait, Qatar, UAE, and Saudi Arabia). This section will start by addressing the data collection technique before defining the variables, measurements, and sources for both the dependent and independent variables. The next step is dedicated to the research estimation techniques, and, finally, the descriptive statistics of the variables.

### 2.1. Sample selection

The full dataset includes annual panel data for four GCC countries: Kuwait, Qatar, UAE, and Saudi Arabia for 31 years between 1990 and 2020. Thus, the sample consists of 124 country-year observations.

Even though the countries are all classified as emerging economies, there is a lack of homogeneity in terms of size, population, GDP and oil reserves. In addition, each country has a different starting date for IFRS compliance, as shown in Table 1.

**Table 1.** IFRS adoption year

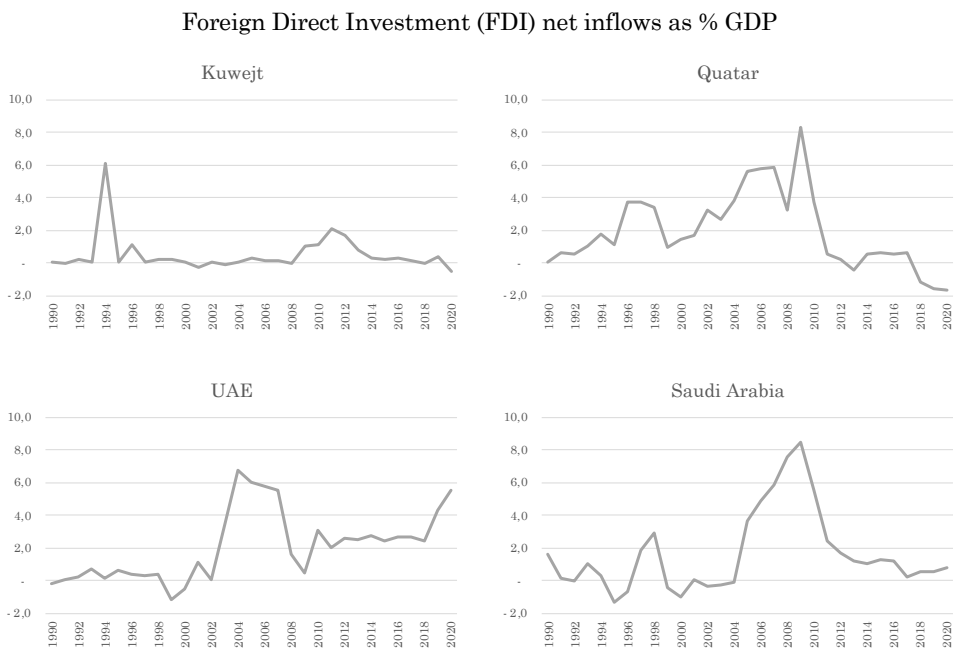
Countries	IFRS adoption year
Kuwait	1990
Qatar	2002
United Arab Emirates	2015
Saudi Arabia	2017

Source: information available and obtained from IAS plus.

## 2.2. Definition of variables

FDI is a weighty element in terms of international economic integration. According to the OECD library, FDI represents a class of cross-border investments where an investor in economy A establishes a lasting and significant interest in an enterprise in economy B (OECD, 2014). This stable and long-lasting link between the two economies creates an economic channel that will promote the country's economic development at the macroeconomic level. In line with previous studies and to ensure higher comparability of data, this study employs the natural logarithm of the absolute value of foreign direct investments, "FDI", as the dependent variable. Figure 1 below plots the FDI inflows as a percentage of GDP for each country separately between 1990 and 2020. In 2020, the UAE was ranked first in FDI inflows, reaching its peak for the whole period.

**Figure 1.** Foreign Direct Investment inflows, 1990–2020



Source: authors' own elaboration using data retrieved from World Bank data, November 2022.

The IFRS adoption dummy variable is intended to ensure a certain level of comparability with previous studies. Therefore, the dummy variable IFRS takes the value of 1 for the years of adoption in each country and 0 otherwise. The adoption status was extracted from the IASB Jurisdiction profile webpage. Considering the existing literature and the IFRS foundation objective, the IFRS adoption variable is expected to positively impact FDI inflows.

For this reason and to better understand what affects FDI inflows, this study introduces other elements as control variables that can be drivers of FDI. Consequently, nine control variables are employed in our empirical analysis. According to Beneish et al. (2015), FDI inflows are highly sensitive to changes in a country's GDP. Thus, the first two variables used are two GDP parameters that reflect two different angles for a nation's productivity and prosperity to capture the dynamics of each emerging market under study: 1 – gross domestic product "GDP" is measured by the decimal logarithm of GDP in current USD, which reflects the country size; 2 – GDP *per capita* "GDPCAP" reflects the nation's prosperity, as it measures the economic output per person. These measures are used in Gordon et al. (2012), Lungu et al. (2017), Beneish et al. (2015), and Siriopoulous et al. (2021). The trade variable "TRADE", measured as the absolute value of imports plus exports as a percentage of GDP, is considered a proxy related to the degree of a country's economic openness; the official exchange rate "EXCH", which reflects the country's stability, is measured by national currency units per SDR (Special Drawing Rights, a unit of account for the IMF that represents an artificial currency instrument). The regulatory quality variable, "REGQ", is an estimate ranging between  $-2.5$  (weak) and  $2.5$  (strong). This index captures the perceptions of the government's capacity to formulate and implement sound policies and regulations that permit and promote private sector development (following Daskalopoulos et al., 2016; Yousefinejad et al., 2018; Mameshe et al., 2021). All these variables are expected to stimulate FDI inflows in a country.

The countries under study are known for their wealth in oil reserves. The variable of natural resources, "NATUR", measured as total natural resources rent as a percentage of the country's GDP, is a control variable to account for the contribution of natural resources to intensify FDI inflows. This variable is also used in Owusu et al. (2017). The last three control variables, which are overall representatives of the economic freedom of the country, and that are said to influence FDI inflows, are property rights, "PROPR", financial freedom, "FINF", and tax burden, "TAXB". These variables are not widely used in the literature, but are found to be important to include in this study. Property rights is a measure of the country's rule of law, financial freedom is a measure of market openness, and tax burden is a measure of government size. Details related to the definition, measurement, and sources of the variables are summarised in Table 2.



**Table 2.** Variables description, measurement, and data sources

Variables	Measurements	Data collection sources
<b>Dependent Variable</b>		
FDI	Natural Logarithm of FDI inflow in current USD	World Bank data
<b>Independent Variables</b>		
IFRS adoption	Dummy variable equal to 1 for the year of adoption; 0 otherwise	The IASB's webpage. <a href="https://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/view-jurisdiction/saudi-arabia/">https://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/view-jurisdiction/saudi-arabia/</a>
GDP	Log of Gross Domestic Product (GDP) in current USD	World Bank data
GDPCAP	Gross Domestic Product <i>per capita</i> in current USD	World Bank data
TRADE	Trade as a percentage of GDP (imports plus exports)	World Bank data
EXCH	Annual year-end exchange rates measured by national currency units per SDR	International Monetary Fund data
NATUR	Total natural resources rents as a percentage of the country's GDP	World Bank data
REGQ	Regulatory Quality estimate that captures perceptions of the government's ability to formulate and implement sound policies and regulations that permit and promote private sector development. It ranges between -2.5 and 2.5	World Bank data
PROPR	Property rights as a measure of the rule of law	The Heritage Foundation
FINF	Financial Freedom as a measure of market openness	The Heritage Foundation
TAXB	Tax Burden as a measure of government size	The Heritage Foundation

Source: authors' own elaboration.

This study will employ the panel co-integration test to investigate the relevance of IFRS adoption and control variables that influence FDI inflows. The first step plots the descriptive statistics of the variables. The panel unit root test is then applied to check whether the variables are stationary or non-stationary and

to identify each variable's level of integration. The null hypothesis of the panel unit root test is the existence of a unit root. In other words, the series is said to be non-stationary, and in this case of unit root existence, the data is considered homogenous, which is a drawback of the study. The alternative hypothesis is the absence of a unit root, and the series is said to be stationary. Once the integration is met for all variables, the panel co-integration test can be implemented. This test, introduced by Pedroni (2004), employs seven test statistics to test the null hypothesis of no co-integration in non-stationary panels. Once the Pedroni test indicates co-integration among variables, the fixed and random effect models are presented, followed by the last step, which is the instrumental regressions represented by the Panel Generalized Method of Moments (GMM), where the independent variables are set as instruments that affect FDI inflows.

### 2.3. Descriptive statistics

The first stage of analysing a data set starts with the variables' descriptive statistical measures, reported in Table 3, which show each variable's mean, standard deviation, minimum and maximum. FDI and GDP are positively skewed, with values of 2.79 for FDI and 1.64 for GDP. For this reason, these variables were normalized using natural and decimal logarithms, respectively (similar to Gordon et al., 2012 and Lungu et al., 2017). The REGQ measure averages slightly more than zero, indicating moderate governance performance.

**Table 3.** Descriptive statistics

Variables	Mean	Std Dev.	Maximum	Minimum	N
lnFDI	6.544	2.378	10.582	-0.223	124
IFRS	0.476	0.501	1	0	124
logGDP	4.996	0.540	5.899	3.812	124
GDPCAP	30,067	18,907	85,076	5,420	124
TRADE	96.407	27.864	176.748	56.088	107
EXCH	4.192	2.221	5.919	0.411	107
NATUR	33.403	11.765	58.983	9.154	124
REGQ	0.334	0.352	1.120	-0.310	124
PROPR	64.515	18.594	90	40	124
FINF	47.177	8.512	60	30	124
TAXB	97.982	4.111	99.9	87.5	124

Note: all variables are defined in Table 2.

EXCH and TRADE represent a smaller sample size due to a lack of data for some years.

Source: authors' own elaboration.

## 2.4. Model Specification and Estimation Technique

This paper explores the effect of IFRS adoption on FDI inflows taking into consideration other control variables. To this end, and to test the previously set hypothesis, the empirical model of this study is specified in the following equation:

$$\begin{aligned} \ln FDI_{i,t} = & \beta_0 + \beta_1 IFRS_{i,t} + \beta_2 \log GDP_{i,t-1} + \beta_3 GDPCAP_{i,t-1} + \\ & \beta_4 TRADE_{i,t-1} + \beta_5 EXCH_{i,t-1} + \beta_6 NATUR_{i,t-1} + \beta_7 REGQ_{i,t-1} + \\ & \beta_8 PROPR_{i,t-1} + \beta_9 FINF_{i,t-1} + \beta_{10} TAXB_{i,t-1} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

The subscripts assigned to variables reflect the country ( $i$ ) and period ( $t$ ). The time lag of one year is captured within the regression models, as FDI inflows refer to values that may be driven by explanatory factors subsequent to their disclosure or assessment.  $\ln FDI$  is the natural logarithm of the net inflows of FDI in current USD in each country; IFRS is the dummy variable for the IFRS adoption and takes the value of 1 in the years of adoption, and 0 otherwise; Market size is measured using different GDP measures:  $\log GDP$  is the decimal logarithm of gross domestic product, and  $GDP \text{ per capita}$  is measured by dividing GDP by its total population, which represents the country's economic output per person. TRADE is measured by imports and exports as a percentage of GDP, which represents the openness of a country's economy. EXCH represents the annual year-end exchange rates measured by national currency units per SDR. NATUR represents the natural resource endowment measured as total natural resource rent as a percentage of GDP. REGQ is a regulatory quality estimate that captures perceptions of the government's ability to formulate and implement sound policies and regulations that permit and promote private sector development; its value ranges between  $-2.5$  and  $+2.5$ . This study includes three measures of economic freedom, which are also FDI determinants: PROPR – property rights, as a measure of the rule of law; FINF – financial freedom, as a measure of market openness; TAXB – the tax burden, as a measure of government size.

## 3. Empirical analysis

### 3.1. Panel correlation matrix

When using multiple independent variables, the first stage of any empirical analysis is to test the data for any multicollinearity among the variables. The panel correlation matrix is employed, and the results are plotted in Table 4. The highest correlation coefficient of 0.72 was recorded between TRADE and REGQ. The empirical results of the panel correlation matrix shown in Table 4 indicate the absence of any multicollinearity among the variables examined, as no correlation coefficient exceeds 75%.

**Table 4.** Panel correlation matrix results

Variables	LNFDI	IFRS	logGDP	GDP-CAP	TRADE	EXCH	NATUR	REGQ	PROPR	FINF	TAXB
LNFDI	1	-0.54	0.51	-0.17	0.28	0.72	-0.31	0.21	-0.07	-0.16	0.06
IFRS		1	-0.48	0.47	-0.16	-0.49	0.02	0.00	0.32	0.50	-0.22
logGDP			1	-0.27	0.16	0.39	-0.16	-0.06	-0.16	0.03	0.45
GDPCAP				1	0.17	0.06	-0.14	0.46	0.40	0.29	0.09
TRADE					1	0.16	-0.44	0.64	0.16	0.15	-0.01
EXCH						1	-0.49	0.36	0.07	-0.24	-0.04
NATUR							1	-0.63	-0.42	-0.18	0.06
REGQ								1	0.59	0.12	0.07
PROPR									1	0.30	0.06
FINF										1	0.03
TAXB											1

Source: authors' own elaboration.

### 3.2. Panel unit root tests

The stage after the descriptive statistics and the correlation matrix is the panel unit root that tests the stationarity of the data. It is recommended to have stationary data, as a unit root (non-stationary data) indicates homogenous data, which is not advisable. The panel unit root tests are shown in Table 5 below, first at the level and then at the first difference for all the series in our data set, namely *lnFDI*, *logGDP*, *GDP-CAP*, *TRADE*, *EXCH*, *NATUR*, *REGQ*, *PROPR*, *FINF*, and *TAXB* [*czy kursywa?*].

**Table 5.** Panel unit root test results

Variables	At Level		At 1 <sup>st</sup> Difference		Order of integration
	Test Statistic	p-value	Test Statistic	p-value	
lnFDI	-3.643***	0.0001	-14.725***	0.0000	<i>I</i> (0)
logGDP	-0.811	0.2086	-8.061***	0.0000	<i>I</i> (1)
GDPCAP	-0.578	0.2816	-9.449***	0.0000	<i>I</i> (1)
TRADE	-2.413***	0.0079	-8.521***	0.0000	<i>I</i> (0)
EXCH	-1.643	0.0502	-7.833***	0.0000	<i>I</i> (0)
NATUR	-2.841***	0.0023	-11.271***	0.0000	<i>I</i> (0)
REGQ	-0.691	0.2449	-6.102***	0.0000	<i>I</i> (1)
PROPR	-0.576	0.2821	-7.625***	0.0000	<i>I</i> (1)
FINF	0.170	0.5675	-7.255***	0.0000	<i>I</i> (1)
TAXB	0.269	0.6059	-7.897***	0.0000	<i>I</i> (1)

\*\*\* Indicate statistically significant at a 1% significance level.

Source: authors' own elaboration.

The null hypothesis states that the variable is non-stationary, while the alternative implies its stationarity. As Table 5 shows, the unit root test results are diversified between variables integrated at  $I(0)$  and others of order  $I(1)$  at the 1% significance level. *lnFDI*, *TRADE*, *EXCH* and *NATUR* are all integrated of order  $I(0)$ . Therefore, it can be concluded that all variables are stationary as integrated of order 1, denoted as  $I(1)$ , and the process can now be continued as panel co-integration (1st generation).

### 3.3. The Pedroni panel co-integration tests

Based on the panel unit root tests in Table 5, all variables are stationary in order 1. Hence, the panel co-integration test can be established at this level to investigate whether a long-run equilibrium relationship exists among the variables under study (Pedroni, 2004). Pedroni (2004) introduced seven statistics to test the null hypothesis of no co-integration among the variables: four within-dimension/panel and three between-dimension/group statistics. The panels are called *panel v-statistic*, *panel rho-statistic*, *panel PP-statistic*, and *panel ADF-statistic*. As for the group statistics, the three dimensions are called *group rho-statistic*, *group PP-statistic*, and *group SF-statistic*. If the null hypothesis of no co-integration is rejected through this test, the long-run estimation can be processed, and the coefficients can be computed.

The Pedroni panel co-integration test results are shown in Table 6. Four of the seven tests indicate the rejection of the null hypothesis of no-cointegration at the 1% significance level: panel PP-statistic, panel ADF-statistic, group PP-statistic, and group ADF-statistic. Therefore, it can be concluded that the variables used in this study are co-integrated in Kuwait, Qatar, UAE, and Saudi Arabia for the period between 1990 and 2020, and a long-run estimation can be conducted.

### 3.4. Estimation of the GMM regression

Based on the Pedroni panel co-integration test results shown in Table 6, the variables were found to be co-integrated. The next step is to investigate and run the estimation. Following Daskalopoulos (2016), the GMM estimation technique is used as it yields better and more consistent results in small samples co-integrated panel regressions compared to the Fully Modified OLS (FMOLS) and the OLS techniques. The results of the instrumental regression technique (GMM) of the empirical model (1) for testing hypothesis H1 are found in Table 8.

Before analysing the GMM estimation test results, both the fixed and the random effect models are estimated. The results are shown in Table 7. The results of the fixed effects model show that at the 5% significance level, *NATUR* was the only variable found to be significant, and at the 10% significance level, *GDCPCAP* is significant. In the random effects model, *GDPCAP*, *TRADE* and *EXCH* were found to be significant. *IFRS* was found to be positive but insignificant.

**Table 6.** Pedroni panel co-integration test results

Criterion	Null hypothesis: no co-integration						
	Panel v-statistic	Panel rho-statistic	Panel PP-statistic	Panel ADF-statistic	Group rho-statistic	Group PP-Statistic	Group ADF-statistic
Statistic	0.234	1.021	<b>-4.092***</b>	<b>-2.614***</b>	1.512	<b>-6.757***</b>	<b>-4.327***</b>
P-value	0.407	0.846	<b>0.000</b>	<b>0.004</b>	0.934	<b>0.000</b>	<b>0.000</b>

\*\*\* Indicate statistical significance at the 1% level.

Note: Both intercept and trend are included in the co-integration equations.

Source: authors' own elaboration.

**Table 7.** Panel data results-Fixed vs. Random effects

Variables	Fixed Effects			Random Effects		
	Coefficient	t-stat	P-values	Coefficient	t-stat	P-values
IFRS	0.586	0.725	0.47	0.145	0.219	0.82
logGDP	2.959	1.237	0.22	0.481	0.635	0.52
GDPCAP	<b>-7.840*</b>	-1.718	0.09	<b>-2.810**</b>	-1.963	0.05
TRADE	-0.004	-0.228	0.82	<b>0.019**</b>	1.985	0.05
EXCH	0.202	0.179	0.85	<b>0.736***</b>	5.041	0.00
NATUR	<b>0.077**</b>	2.091	0.04	0.025	1.185	0.24
REGQ	-0.161	-0.142	0.88	-0.228	-0.211	0.83
PROPR	-0.007	-0.317	0.75	-0.003	-0.015	0.88
FINF	0.018	0.546	0.58	0.021	0.724	0.47
TAXB	0.075	0.773	0.44	0.068	0.711	0.48
R-squared	0.669			0.653		

\*\*\*, \*\*, and \* indicate statistically significant at the 1%, 5%, and 10% significance levels, respectively.

Source: authors' own elaboration.

The results of the GMM estimation in Table 8 indicate an R-squared of around 65% and an adjusted R-squared of around 60%, which provide evidence of the overall significance of the model. Only three variables are statistically significant with FDI, consistent with the random effects model previously presented. GDP *per capita* presents a negative and significant coefficient at the 5% significance level. Multiple studies, such as Lungu et al. (2017) and Mameshe and Masood (2021), indicated that economies with high GDP *per capita* and high trade activity are more attractive as targets for investors; in this study, the findings suggest that fast-growing economies may also be less attractive to foreign investors. Exchange rate

and trade variables were positively and significantly related to FDI at the 5% significant level.

Inconsistent with the expectations of the H1 hypothesis, the IFRS adoption dummy variable was positively but insignificantly related to FDI inflows. Moving to the size of the country measured by logGDP, the results indicate a positive but insignificant association with FDI inflows at the 5% significance level. These results are inconsistent with previous studies, namely Yousefinejad et al. (2018), who used the Dynamic Ordinary Least Squares (DOLS) technique, Gordon et al. (2012) and Lungu et al. (2017), who used the OLS technique, and Mameshe and Massod (2021), who used panel ARDL (PMG) technique.

Additionally, both the natural reserves of the country and the regulatory quality variables have an insignificant impact on FDI inflows at the 5% significance level. By implication, it can be said that adopting IFRS does not attract more investors to a country with a strong institutional infrastructure, regulatory quality, or abundant natural resources. These results are inconsistent with Owusu et al. (2017).

**Table 8.** GMM estimation results

$\ln FDI_{i,t} = \beta_0 + \beta_1 IFRS_{i,t} + \beta_2 \log GDP_{i,t-1} + \beta_3 GDPCAP_{i,t-1} + \beta_4 TRADE_{i,t-1} + \beta_5 EXCH_{i,t-1} + \beta_6 NATUR_{i,t-1} + \beta_7 REGQ_{i,t-1} + \beta_8 PROPR_{i,t-1} + \beta_9 FINF_{i,t-1} + \beta_{10} TAXB_{i,t-1} + \varepsilon_{i,t}$			
Variables	Coefficients	t-statistic	P-value
IFRS	0.487	0.603	0.548
logGDP	0.473	0.642	0.523
GDPCAP	<b>-0.000**</b>	-2.134	0.037
TRADE	<b>0.020**</b>	2.154	0.035
EXCH	<b>0.777***</b>	5.063	0.000
NATUR	0.027	1.337	0.186
REGQ	-0.215	-0.205	0.839
PROPR	-0.005	-0.221	0.826
FINF	0.016	0.555	0.580
TAXB	0.088	0.902	0.370
R-Squared	0.956	Adj. R-Squared	0.803

\*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: authors' own elaboration.

The economic freedom variables represented by property rights, financial freedom and tax burden were all found to be insignificant determinants of FDI.

## 4. Discussion and conclusion

Using macroeconomic data, this paper investigated the relationship between IFRS adoption and FDI inflows in a sample of GCC countries, namely Kuwait, Qatar, UAE, and Saudi Arabia between 1990 and 2020. FDI inflows are considered a major indicator of a country's economic development; Thus, it is highly interesting to test its change flow after the introduction of the IFRS standards.

Multiple studies concentrated on the topic of IFRS and FDI. This paper fills the gap in the literature concerning the macroeconomic implications of IFRS adoption in emerging economies and, more precisely, in the MENA region. To the best of the authors' knowledge, this paper is one of the few to discuss the impact of IFRS adoption and FDI inflows in the GCC. The results may have important economic implications in terms of a better understanding of the business environment in the countries under study and the efforts needed to shape financial reforms and strengthen the institutional quality to attract more FDI.

Our empirical results lead to multiple conclusions. First, only exchange and trade positively and significantly affected FDI inflows in these countries. Second, contrary to expectations, gross domestic product *per capita*, which is a measure of a country's prosperity, was significantly but negatively related to FDI. Third, and inconsistent with the literature (Lungu et al., 2017; Gordon et al., 2012; Yousefinejad et al., 2018), the results do not support the argument that after the adoption of IFRS, other chosen economic indicators, such as property rights, tax burden and financial freedom, and the natural resources and regulatory quality measures are significantly related to FDI; in other words, it can be concluded that the IFRS adoption, strong institutional infrastructure, regulatory quality, and the abundance of natural resources all together may not undoubtedly enhance FDI inflows in these emerging countries. However, an empirical analysis will always struggle with compounding effects that surround IFRS adoption. A country's decision to adopt IFRS is usually an integral part of broader economic, political, and social reforms. It is then highly challenging to disentangle the net effect of adopting IFRS from the other determinants when assessing the impacts on the macroeconomic variables, such as FDI.

Several limitations of this research may be considered in future research to produce more robust evidence. First, the research area may be enlarged to include more (or all) MENA region countries. Second, this paper adopted only eight independent variables. Other variables, such as culture, legislative framework, IFRS scoring level, and the role of information asymmetry, may be tested to ascertain whether they moderate the relationship between IFRS adoption and FDI inflows, including distinguishing between short- and long-run effects.

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