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RESEARCH ARTICLE

Development Zones and Foreign Direct Investment in Jordan

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ARTICLE INFO	ABSTRACT
	Given its essential role in addressing potential economic shortcomings and imbalances, foreign direct investment (FDI) has long been a major concern for policymakers in most economies worldwide. The concept of development zones has been proposed to encourage and attract new investment, serving as investment incubators by offering numerous benefits and customs exemptions. In 2008, Jordan began experimenting with development zones to attract investment, reduce rising unemployment and poverty rates, and stimulate economic growth. This research aims to shed light on the role of development zones in attracting FDI to Jordan between 1975 and 2023. The autoregressive distributed lag (ARDL) model was used to achieve this goal. The development zone experiment was represented by a dummy variable indicating the period in which the experiment began, which coincided with the establishment of free zones and industrial estates. According to the results, the development zones did not attract the FDI Jordan hoped for. Because these zones have failed to attract investment despite the incentives offered, empirical evidence also shows shortcomings in their management. According to the research, the exemptions and incentives granted to investors in these zones should be reevaluated, smuggling should be combated, and waste in these exemptions should be eliminated. The most significant problems facing these zones should also be examined.

INTRODUCTION

The development concept emerged at the onset of the last decade of the twentieth century, transitioning from a traditional framework to an emphasis on economic dimensions through infrastructure modernization, technological advancement, and increased capital inputs. Development Zone serve as a crucial development instrument that fosters economic growth and enhances international competitiveness. Development Zone manifest this role in various ways by promoting exports, attracting foreign direct investment, and generating employment opportunities. They exist in multiple forms, including comprehensive economic zones, environmental zones, industrial zones, and technology and innovation zones, with governments advocating for these areas to stimulate economic growth rates (UNIDO, 2015).

This study finds that Development Zoneshave substantially contributed to the establishment of new competitive relationships and the development of an interconnected economy. Aggarwal (2004), Kim (2007), Mustafa (2007), and White (2011) asserted that Development Zonesare more efficacious in fostering economic reform through innovation, technology dissemination, and industrial process enhancement. Additionally, Rawashdeh (2004), Zeng (2012), Abd alall (2013), and Zaldivar and Molina (2018) emphasized that Development Zonesare pivotal in attaining economic development by attracting foreign direct investment, diversifying exports, generating employment opportunities,

and implementing contemporary administrative practices. Rawashdeh (2004), Mustafa (2007), Wang (2013), and Babita (2018) emphasized that Development Zonesreinforced economic blocs by establishing new entities that enhanced economic connections and significantly impacted productivity rates.

The Nature of Development Zone in Jordan

The concept of creating development zones in Jordan originated in the 1980s, commencing with the establishment of industrial cities under the Jordanian Industrial Estates Corporation Law No. (59) of 1985. This legislation was enacted to study, plan, establish, and manage industrial projects within these cities and to promote the development of existing industrial initiatives across various industrial cities in Jordan. The law was enacted to promote the relocation and dissemination of industrial projects across different regions of Jordan, aiming to foster industrial integration among these areas and to address the challenges that such projects may encounter (Adenat & Madadheh, 2020).

A law was enacted, Development Zones and Free Zones No. (2) of 2008, which reclassified industrial cities as development zones. Consequently, the Industrial Estates Corporation was restructured into a private joint stock company in accordance with the Development Zones and Free Zones Law in 2014, as Investment Law No. (30) of 2014 superseded Development Zones and Free Zones Law No. (2) of 2008, aimed at enhancing the investment climate by consolidating the administrative framework for investment and offering additional exemptions and incentives. The Industrial Estates Company persisted in its role as a private developer of industrial estates subsequent to its transition to a formula Development zone under the auspices of the Jordan Investment Authority. The corporation is committed to managing and sustaining industrial cities in accordance with essential infrastructure standards, by establishing commercial partnerships to enhance building efforts, diversify and augment revenue streams, and reorganize assets and liabilities. It would enhance infrastructure and services to attract investors and facilitate their localization. In 2022, the Investment Environment Law No. (21) of 2022 was enacted, and a dedicated Ministry of Investment was established as the legal successor to the Jordan Investment Authority Adenat & Madadheh (2020). The development areas take various forms, as shown below:

Industrial cities

Table 1delineates various economic parameters for the industrial cities of Jordan, categorized under the jurisdiction of the Jordanian Industrial Estates Company. King Abdullah II Industrial City in Sahab contains the largest concentration of enterprises, amounting to 406, representing 46% of all companies in the industrial cities. In 2022, the investment volume in this sector reached USD 1,812.88 million, representing 43% of the total investment in public industrial cities. The industrial city of Mafraq came last, with 10 firms representing 1% and an investment volume of USD 11.50 million, being 0.002 of the total investment in general industrial cities. In contrast, the labor force in the general industrial cities was 62,703 in 2022. Al-Hassan Industrial City constituted 54% of the employment volume, due to the substantial demand for labor in the textile and knitting industries.

Table 1.Economic indicators for industrial cities in Jordan

City	Number of companies	Investment size/Million $.	Number of workers
King Abdullah II Industrial City	406	1,812.88	14676
Al Hassan Industrial City	134	606.06	33932
Al-Hussein bin Abdullah II	38	83.34	918
Aqaba International Industrial	135	704.72	5000
Al-Muwaqqar Industrial City	91	896.41	5538
Mafraq Industrial City	10	11.50	180
Madaba Industrial City /	30	28.89	1342
Salt Industrial City / Balqa	22	29.88	630
Tafila Industrial City / Tafila	17	24.59	487
Total	883	4,198.27	62703

Sources: Jordan Industrial Estates Company, 2022

Private Industrial Cities

The private sector is involved in the management and establishment of industrial cities, with three private industrial cities located in Jordan. Industrial clusters Situated in the Amman Governorate, adjacent to King Abdullah II Industrial City in Sahab, it encompasses 55 factories, predominantly engaged in the apparel and knitwear manufacturing sector. The overall area is 0.20 km², and it has attained its maximum capacity, Adenat & Madadheh (2020).

Al-Dulaile Industrial Complex Real Estate Company is the primary developer of the Al-Dulaile Complex Development Zone, founded in 2001 and inaugurated by King Abdullah II bin Al-Hussein. The location is in the Zarqa Governorate, Al-Dulaile District, approximately 35 kilometers from Amman, the capital. The organization is designated as a public joint stock company with a capital of USD 29.60 million. The city encompasses an area of 0.40 km² and is fully built. The second phase, encompassing an area of 0.50 km², is now in preparation. It consists of 12 clothing manufacturers, employing a total of 17,000 individuals, including 4,000 Jordanian employees (IDMC, 2020).

Al Thuraya Industrial City Founded in 2016, it is located in Mafraq Governorate, covering an approximate area of 1 km². It consists of 72 factories with a total investment of USD 63.42 million. In 2019, the export volume to those factories amounted to approximately USD 352.36 million, and the city's workforce comprised 21,000 workers. The entire area designated for public and private industrial cities was 15.17 km², with investments from 1,022 businesses of various nationalities. In 2022, the investment volume reached 4,464.65 million, and the workforce comprised 108,703 individuals.Economic Development Zone with diverse activity

The Jordanian government formulated the Development Zones Law of 2008, which received formal approval from the Jordanian Parliament. The legislation mandates the creation of development zones in the northern and southern regions of the Kingdom to attain economic and social prosperity for all Jordanian citizens. Ma'an, situated in southern Jordan, was selected as one of the locations for the development zone.

Development Zone for the Information Technology Sector

These zones are overseen by multiple development firms that formulate and furnish comprehensive plans, providing land either through leasing or sale to investors, thereby enhancing the interaction between the public and private sectors, fostering partnerships, and overseeing the establishment of requisite infrastructure. The discussion of the development zones will be elaborated upon subsequently, in accordance with the development firms accountable for those regions.

Foreign Direct Investment

Jordan is a unique region that draws foreign direct investment despite the numerous geographical constraints and the tumultuous political situation. Jordan is notable for its geographical position in the center of the Middle East. It serves as a vital axis connecting Europe, Africa, and Asia, regarded as a pivotal place for accessing over one billion consumers, Jordan Chamber of Industry (2016). Despite the Jordanian government's economic policies and initiatives to enhance the investment climate, further measures were necessary to establish a viable investment framework, resulting in economic imbalances that prompted the exodus of foreign capital.

Jamil (2002) posits that administrative bureaucracy, the proliferation of administrative and regulatory entities encountered by investors, the monopolization of investment opportunities by a select group, elevated operational and energy costs, the volatility of investment policies, and a tumultuous political climate are the primary factors contributing to the exodus of foreign capital. In 1973, the Jordanian government enacted the Foreign Direct Investment Law, which offers tax and customs concessions to create an appealing environment for investors. In 1975, foreign direct investment flows were roughly USD 11.92 million. In the early 1980s, the amount of these flows reached roughly USD 14.80 million, but declined to USD 12.97 million in 1985, reflecting a decrease of 12.4%. This prompted the Jordanian government to revise economic laws and policies to attract increased international investment and address issues, such as insufficient capital for economic development, particularly in light of reduced foreign funding. In 1990, net foreign direct investment flows amounted to 25.2 million USD, reflecting a growth rate of 175% relative to 1985 (Nwasrah, 2018).

In the early 1990s, net foreign direct investment begun to oscillate. During that period, the Jordanian government recognized that foreign direct investment was a crucial instrument for economic rectification. This prompted the Jordanian government to implement more legal changes, including economic liberalization and increased openness to external influences. This resulted in a rise in net foreign direct investment flows to roughly USD 156.31 million in 1999, up from USD 13.25 million in 1995.

At the onset of the twenty-first century, foreign direct investment flows surged dramatically, attaining USD 912.61 million in 2000, indicating that these flows increased 76-fold over 26 years. Nevertheless, these inflows diminished owing to political circumstances and regional tensions, culminating in USD 238.05 million in 2002. Subsequently, foreign direct investment inflows progressively escalated, attaining unprecedented levels in the history of the Jordanian economy in 2006, amounting to USD 3,547.15 million, as investors sought sanctuary in Jordan due to its internal stability, fleeing the turmoil experienced by most neighboring nations. However, these inflows rapidly diminished at the onset of 2009 due to the ramifications of the global financial crisis, resulting in investors' hesitance and withdrawal from risk in anticipation of potential losses. In 2009, foreign direct investment flows decreased to around USD 2,411.42 million, a fall of 14% from USD 2,824.24 million in 2008. (CBJ, 2010).

The ramifications of the Arab Spring adversely impacted foreign direct investment, which diminished to roughly USD 1,547.29 million in 2012 from USD 1,687.39 million in 2010, before rising to nearly USD 1,945.45 million in 2013, reflecting a growth rate of 25.7%. In 2016, foreign direct investment flows declined to USD 1,551.80 million from USD 2,176.89 million in 2014. This dip is ascribed to the diminishment of certain projects resulting from falling oil prices and the heightened complexity of various investment regulations. In 2017, these flows experienced a modest increase, culminating at USD 1,663.57 million, followed by a significant decline of USD 730.23 million in 2019, attributable to the global disruption caused by the Corona pandemic, which halted international supply chains. The Jordanian economy began to recover by 2022, with foreign direct investment flows reaching USD 1,139.63 million (CBJ, 2022).

2. REVIEW OF THE THEORETICAL LITERATURE

In 1973, Kojima proposed one of his initial views concerning foreign direct investment from wealthy Asian nations, particularly Japan. He indicated that the incapacity of firms to compete in the Japanese local market compelled them to seek investment opportunities overseas, and noted that the most proficient local companies assist the less efficient firms beyond the local market. Consequently, the less robust enterprises were not expanding internationally. particularly in other emerging nations. This is exemplified by the case of Suzuki Motor, a Japanese business that entered the Indian market due to its inability to compete with domestic rivals like Toyota Motors, ultimately resulting in its failure. Kojima's theory elucidates the proliferation of company operations in global marketplaces by regionally proficient firms (Ozawa & Kojima, 1973).

Kojima (1973, 1975, 1985) integrated his business theories with foreign direct investment (FDI) theories, advocating for the essentiality of FDI due to its pivotal function in enhancing the competitiveness and efficiency of factor markets internationally, as well as its contribution to optimizing production processes in resource-rich countries. Kojima's thesis identifies resources, labor, and market orientations as the primary catalysts of international investment. When a corporation allocates resources to enhance and safeguard imports of items that the domestic market lacks or produces at a greater expense, this is termed trade-oriented or resource-oriented foreign direct investment (FDI). If the investment capitalizes on low labor costs, it is classified as labor-oriented foreign direct investment; if it seeks to access a substantial market or circumvent trade obstacles, it is termed market-oriented foreign direct investment. Kojima's idea mostly concentrated on Japanese investment, excluding other significant Asian economies, like China, India, Korea, and Taiwan. Numerous instances of international investment demonstrate that Kojima posits enterprises are unable to compete domestically, prompting them to invest overseas (Kojima & Ozawa, 1975).

Kojima posits that the link between foreign direct investment (FDI) and international commerce is highly complementary when FDI is directed towards industries where the host country possesses a comparative advantage, while the home country lacks such an advantage. If foreign direct investment occurs in industries where the home country possesses a comparative advantage and the host

country does not, the relationship between international trade and foreign direct investment transforms into a substitution relationship (Marchant et al., 2002). Kojima contrasts Japanese and American foreign investments to assess the accuracy of the theory's formulation. Japanese investments are complementary to trade as they enhance natural resource development, bolster the competitive advantage of the host country, and increase productivity, thereby elevating the trade exchange rate between the home and host countries. He views American investments as a constraint on trade exchange, as they concentrate on high-tech, capital-intensive sectors and perpetually aim to reinforce the monopolistic dominance of American firms. This analysis indicates that the relationship between foreign direct investment and international trade can be either complementary or substitutive, contingent upon the connections between parent companies and their subsidiaries, as well as their interactions with host countries (Lionel, 1999).

2.1 The Relationship Between Development Zonesand Performance Economic

Development Zoneshave garnered the interest of scholars. Prior research on Development Zonesand current policy has concentrated on the locations of these zones. A series of studies has examined the effects of the incremental implementation of Development Zoneson businesses, industries, and the local economy. Research indicates that the principal advantage for enterprises in establishing economic zones is the access to supplementary incentives and preferential policies for those situated within the region's boundaries. Schminke and Van Biesbrouck (2013) indicated that firms situated within Development Zoneswill endeavor to enhance their exports, production volume, capital, and production capability. Furthermore, Development Zonesenhance manufacturers by facilitating technology transfer throughout supply chains both inside and beyond the region, as noted by Brülhart et al., (2012),Criscuolo et al., (2019).

Development Zonesserve as incubators to foster economic growth by attracting and promoting diverse forms of investment. Foreign direct investment is considered a crucial source of financing for countries, particularly those experiencing financial resource scarcity and weaknesses in their financial and regulatory systems. These regions draw foreign direct investment to address the local resource deficit. Foreign direct investment enhances the capital creation of the host country via net internal and external investment flows, with the investment stock in Development Zonesincreasing through the proportions contributed by foreign investors. Investments in Development Zonesenhance output volume and income via domestic and international enterprises, acknowledging that domestic companies occasionally must seize local investment opportunities due to their limited financial and technological capacities. Furthermore, the foreign investor has amassed economic expertise in operations and possesses production and marketing acumen, which facilitates the creation of new employment opportunities and generates additional income for workers, thereby contributing to the reduction of poverty and unemployment rates and enhancing the domestic product of the state (Noor Al-Huda, 2000).

Neoclassical theories assert that economic growth is driven by two fundamental reasons: technical advancement and labor force expansion, implying that the values of other variables external to this model influence the values of both elements. This concept posits that foreign direct investment in particular locations enhances output. In the short term exclusively, as in the long term, according to the law of diminishing returns to capital, foreign direct investment will not influence the rate of economic growth in internal growth models, and the integration between domestic and foreign investments is the primary solution that foreign investment will provide. An affirmative influence on economic growth rates. However, assume the relationship evolves into a crowding-out dynamic. This will adversely impact long-term economic growth rates, contingent upon the influence of foreign investment in securing local investments. Development Zoneswere established to augment the synergistic environment surrounding those investments. To realize the beneficial effects of investments for attaining sustainable economic growth rates (Nour Al-Huda, 2000).

2.2 Empirical Studies on Foreign Direct Investment (FDI)

The objective of the research conducted by Xaypanya et al. (2015) was to examine the essential elements and determinants influencing foreign direct investment (FDI) in Cambodia, Laos, Vietnam, Malaysia, Thailand, Indonesia, Singapore, and the Philippines. Derived from panel data spanning the years 2000 to 2011. It was determined that infrastructure facilities and levels of openness have a considerable positive impact on FDI in ASEAN3, although inflation exerts a negative influence;

additionally, real exchange rate, GDP, and net ODA do not affect FDI. The ASEAN5 findings indicated that market size and infrastructure are critical determinants for attracting foreign direct investment (FDI).

Song et al., (2020) This study revealed that the quality of institutions is improved by the functioning of nascent markets within special economic zones, through engagement with the local economy, notwithstanding the difficulties encountered by businesses situated outside these zones. The research determined that these firms had effectively garnered substantial foreign direct investment. This study examined location-specific economic strategies in China that create a conducive environment within designated zones. The study utilized a field survey of industrial businesses in China, integrating official lists of Chinese Development Zoneswith a dataset of 2,660 Development Zonesfrom 1998 to 2018, alongside a sample of 37,251 Development Zonesfrom 1998 to 2013. The process by which economic zones exert effect was further analyzed. A time-varying difference-in-difference specification was employed about foreign direct investment.

The research conducted by Korsah et al. (2022) encompasses 16 West African nations from 1989 to 2018. This study employed random and fixed effects regression models to empirically analyze the determinants of foreign direct investment (FDI) in emerging economies, focusing on 12 macroeconomic indicators, including natural resource endowment, market size (GDP), imports and exports of goods and services, trade openness, and exchange rate, specifically in West African countries. The research indicated that Francophone nations garner greater foreign direct investment than Anglophone nations. The aforementioned elements influencing FDI, including infrastructural development, inflation, taxation, and political stability, are inconsequential in assessing FDI in West African nations. Moreover, a disparity exists in the magnitude of Foreign Direct Investment (FDI), with Ghana receiving more than Nigeria, and FDI constitutes approximately 0.66 of the total FDI sent towards West African nations. Foreign Direct Investment as a proportion of Gross Domestic Product is notably minimal. Although this ratio varies among West African nations, the observation indicates that these countries must secure an increasing proportion of foreign direct investment (FDI). Trade openness, imports, market size, and exports are significant determinants of foreign direct investment in West African nations.

Li et al., (2021) examined the influence of Development Zoneson business performance by utilizing the China Industrial Enterprises Database from 1998 to 2007, employing a standard model that characterized enterprises within Development Zonesusing a dummy variable to denote their location relative to the boundaries. The findings demonstrated that the investment performance within Development Zonessurpassed those of assets situated beyond their perimeters. This is due to the preference of high-productivity investments to operate within special economic zones, while low-productivity investments choose to operate outside these zones. The research additionally revealed that firm clustering serves as a catalytic instrument with diverse impacts. Both enterprises within and outside the zones have indirect effects, with the former being more pronounced than the latter. Companies experience enhanced agglomeration effects within a cluster of similar industries compared to those in disparate sectors.

3. METHODOLOGY

The economic variables linked to foreign direct investment were recognized as prospective factors that could enhance the volume of FDI flows within the context of the second purpose of this thesis. The identified variables as potential predictors of foreign direct investment include fixed capital development, the real exchange rate, imports, workers' remittances, and the categories of Development Zonesin Jordan.

The review of prior work examined numerous characteristics and determinants that elucidate foreign direct investment movements. Furthermore, the impact of economic zones on augmenting the volume of these flows is attributable to the significant significance of these locations in attracting international investment. It was imperative to analyze certain factors of FDI in Jordan, viewing it as a crucial indicator of Jordanian economic performance. Certain economists proposed that Development Zonesaugment foreign direct investment inflows (UNCTAD, 1998). Experimental investigations were undertaken. By assessing the interplay of multiple variables and determinants that may influence such flows, emphasis is placed on the significance of their impact. Shahmoradi and Baghbanyan (2011). This thesis's model of FDI flows particularly emphasizes the determinants by

relying on specific factors. The macroeconomic influence of Jordan on foreign direct investment flows, as indicated by the regression equation of the suggested model in this study, is presented below:

$$FDI = ƒ (FCF, RER, M, WR, DZ) \tag{1}$$

The dependent variable is foreign direct investment (FDI), whereas the independent variables include gross fixed capital formation (FCF), imports (M), the real exchange rate (RER), workers' remittances (WR), and a dummy variable. DZ: Development Zone, all variables, with the exception of the exchange rate and workers' remittances, were converted into a logarithmic model to assess growth.

$$\log(FDI_t) = \gamma_0 + \gamma_1 \log(FCF_t) + \gamma_2 \log(M)_t + \gamma_3 \log(RER)_t + \gamma_4 \log(WR)_t + \gamma_5 DZ + \varepsilon_t \tag{2}$$

4. RESULTS AND DISCUSSION

Before commencing the statistical analysis, we sought to ascertain the nature of the data employed in this model, clarify its most prominent characteristics, and determine the suitable method for estimating the parameters of the second study model to illustrate the impact of Development Zoneson foreign direct investment in Jordan. A precise representation of the descriptive statistics of this data was provided to analyze its variance and distribution characteristics, accompanied by a graphical depiction of the time series to demonstrate the presence of intersections and directional trends for each variable employed in this model, thereby averting the emergence of a unit root in the time series data and ensuring the integrity of regression results.

4.1 Descriptive Statistics

Table 2 delineates the key statistical characteristics of the time series related to the study variables utilized in the second model, which aims to illustrate the impact of Development Zoneson foreign direct investment in Jordan and to affirm the integrity of the standard model's formulation and the appropriateness of the chosen statistical methodology. The central tendency metrics were revealed, and the time series demonstrated a normal distribution, resulting in effective consequences.

Table 2. Descriptive Statistics

	Variable	FDI	FCF	M	RER	WR
Absolute values	**Mean**	746.92	4434.28	8975.53	0.99	1630.53
	Median	267.03	2059.35	4296.61	0.98	1457.20
	Maximum	3707.09	1259.02	2744.36	1.12	3372.88
	Minimum	0.47	539.75	287.91	0.89	84.41
	Stnd.Dev	923.48	3879.51	8588.73	0.05	1114.39
	Skewness	1.29	0.69	0.66	0.57	0.144
	kurtosis	3.88	1.74	1.86	2.45	1.47
Logged values	Skewness	-0.60	0.19	-0.30	-	-0.88
	kurtosis	3.38	1.65	2.01	-	2.96
	Jarque-Bera	3.27	3.97	2.75	-	6.37
	Prob.	0.19	0.13	0.25	-	0.04
	Obs.	49	49	49	-	49

Note: FDI, FCF, M, and WR is million USD, and RER, are in Percentage

Table 2 illustrates that the standard deviation was lower than the mean for all model variables, except for the foreign direct investment variable, indicating data heterogeneity and significant variance among the variables. The range, defined as the difference between the minimum and highest values, reveals a considerable disparity among variables such as foreign direct investment, imports, workers' remittances, capital accumulation, and currency exchange rates. Nevertheless, the data demonstrates consistency, with both the arithmetic mean and median falling within the range of the maximum and minimum values.

The results demonstrate that the time series displayed a non-normal distribution; hence, employing a natural logarithm transformation may rectify this problem. Table 2 demonstrates that all skewness

values were either positive or negative, residing within the range of ±1 to ±0.5 in the logarithmically transformed data. Consequently, the logged time series exhibit greater symmetry and are considerably skewed in both directions. Additionally, the skewness values of the time series are positive but not near zero, as all are below 3.00 except for the FDI variable. The Jarque-Bera statistics suggest that all-time series conform to a normal distribution, with the exception of workers' remittances. The non-normally distributed data pose no problem, as the ARDL methodology inherently resolves this issue, which is the strategy utilized in this model.

4.2 Graphical Description

Figure 1. depicts the time series graphs utilized in the second study model. All variables were presented in natural logarithms, with the exception of the real exchange rate, to enhance the consistency of the time series from 1975 to 2023. The graphs demonstrated that none of the time series initiated at zero, indicating the presence of an intersection and a constant inside the data each series.
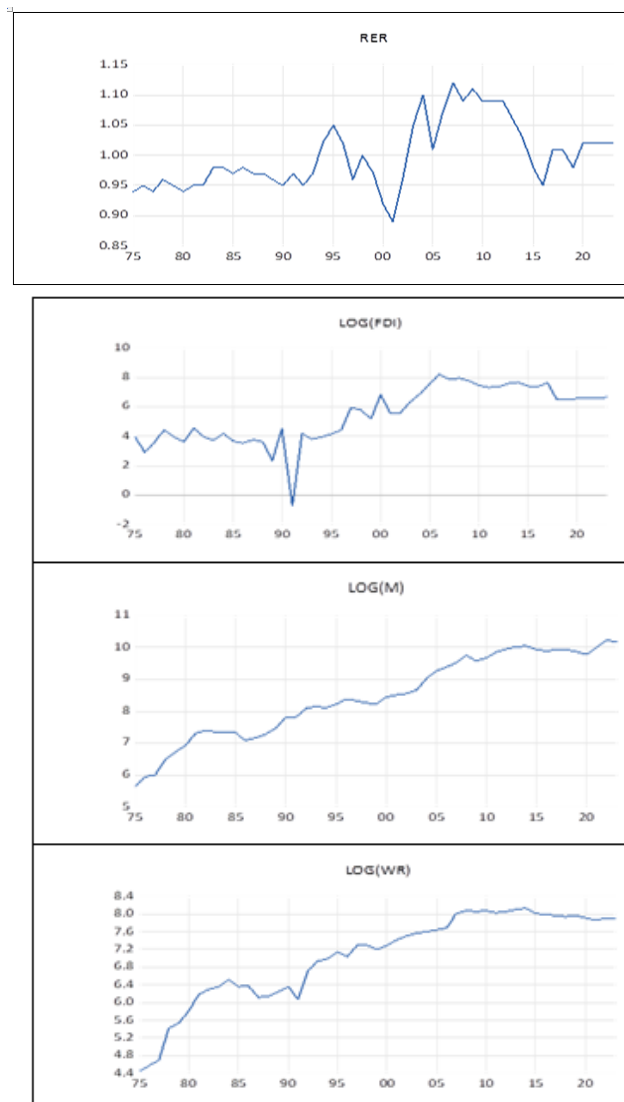

Figure 1. Graphical plots of the variable for Model of Economic Growth

4.3 Stationarity Test

This section examined the stability of the time series for the variables in the second model of this study. The importance of this test is highlighted by the table displaying the results of the Dickey-Fuller (ADF) and Phillips-Perron (PP) tests, which evaluate the stability of the time series and ascertain whether it is stationary at the first difference I (1) or at the level I(0).

Table 3. Results of stationarity (Unit Root) Test

The variables	PP Unit Root Test		ADF Unit Root Test		Status
	At Level	**At First Difference**	**At Level**	**At First Difference**	
LOG (FDI)	-4.37***	-15.66***	-1.35	-14.05***	I (0)
LOG (FCF)	-1.02	-6.18***	-0.99	-6.18***	I (1)
LOG (M)	-2.18	-5.26***	-2.42	-5.25***	I (1)
LOG (WR)	-3.39**	-6.49***	-3.37**	-6.36***	I (0)
RER	-2.42	-7.01***	-2.42	-6.33***	I (1)

Notes: The Lag lengths selection based on SIC, and the critical values from Mackinnon (1996) compared with t-statistics, the signs *, ** and *** denotes significance level at 10%, 5% and 1% respectively

Table 3 displays the results of the time series stability test for the variables of the second research model in comparison to the first study model. The null hypothesis was rejected concerning the natural logarithm of foreign direct investment LOG (FDI) and the natural logarithm of workers' remittances LOG (WR) due to the presence of a unit root, indicating that the time series of the variables lack a unit root and are stationary at level I (0). In contrast, the null hypothesis was accepted for the time series of the natural logarithm of imports LOG (M), the natural logarithm of fixed capital accumulation LOG (FCF), and the real exchange rate RER, owing to the presence of a unit root in these variables, signifying that they are not stationary at level I (0). And fixed at the initial disparity. Nonetheless, they are later incorporated at level I (1). The results consisted of a synthesis of integrated variables at level I (0) and degree I (1). The research will utilize the ARDL methodology to investigate cointegration in the first study model. The ARDL approach is considered the best suitable for situations involving integrated variables at several levels and of the first degree (Paseran et al., 2001).

4.4 Co-Integration Test

After analyzing the stability results of the time series for the variables employed in the second study model and applying the ARDL methodology, the study conducted the bounds test for cointegration, as outlined in Chapter Four, to determine the long-term cointegration among the model variables. Table 5.9 displays the outcomes of the limits test subsequent to determining the optimal time via the Schwartz Information Criterion (SIC). The ARDL (4, 4, 1, 3, 4) model is advised for the second model of this investigation, according to Pesaran et al. (2001).

Table 4.The bounds test for co-integration results

F-Statistic	10.78	
Critical Bounds (k=4)		
Level of significance	**I (0)**	**I (1)**
10%	2.20	3.09
5%	2.56	3.49
2.5%	2.88	3.87
1%	3.29	4.37

Note: The computed critical values based on Pesaran et al., (2001), Case 3: Unrestricted Constant and No Trend.

Table 4 displays the outcomes of the boundaries test for cointegration within the FDI model. The calculated F-statistics surpassed the critical values set by Pesaran et al. (2001), above the 1% significance threshold (10.78>4.37) of the upper critical limit. This indicates substantial statistical evidence of a long-term relationship between the variables of the first model, demonstrating that Development Zonesand FDI determinants have attained a balanced integration with net FDI inflows over the long term.

4.5 Long-Run Analysis

Subsequent to the validation of enduring joint integration among the variables of the economic growth model, the study calculated the long-term coefficients pertaining to Development Zonesand the factors influencing Jordanian economic growth, as illustrated in Table 5.

Table5.ARDL Long-Run Estimation Results

Regressors	Coefficients	t-Statistics
LOG (FCF)	7.46***	3.93
LOG (M)	-6.18***	-4.12
LOG (WR)	6.11***	4.99
RER	8.93	1.60
DZ	-3.10***	-4.25

Note: *, ** and *** denotes significance level at 10%, 5% and 1% respectively

Table 5delineates the results from the longitudinal evaluation of the impact of Development Zoneson foreign direct investment. The analysis reveals a statistically significant adverse effect of development zones on foreign direct investment volume, but the influence of free zones and industrial cities on foreign direct investment is negative but not statistically significant. This discovery supports the preliminary model of the study: these regions did not achieve the anticipated goals of increasing foreign direct investment in Jordan. The data bulletins of the Central Bank of Jordan reveal a decrease in foreign direct investment, although the increasing number of special economic zones, as elucidated in the analysis of foreign direct investment flows in this study.

A previous study by the researcher revealed that investors in Jordanian development zones face significant hurdles at every level of manufacturing. A multitude of individuals have encountered delays in concluding transactions and obtaining company licenses. The decision-making process concerning different entities and government departments engaged in investing demonstrates a duality. Moreover, the infrastructural networks in various development zones have failed to meet investors' expectations, leading to investor misunderstanding and delays in the initiation of production. Conversely, a notable difficulty cited is the persistent rise in raw material prices in the Jordanian market. The ongoing escalation has led to a significant augmentation in production expenses, so elevating the end product's price and, consequently, its retail price to the consumer. The increase in market competitiveness has caused a reduction in demand for items manufactured in development zones, negatively affecting production levels and leading to a substantial loss in export value (Abu Riash, 2022).

The factors influencing foreign direct investment demonstrate that fixed capital accumulation exerts a positive and statistically significant impact; notably, a 1% rise in capital accumulation leads to a 7.46% increase in the volume of foreign direct investment. This outcome corresponds with economic theory and previous studies emphasizing the importance of capital accumulation in improving corporate productivity, hence attracting increased foreign direct investment. Moreover, capital accumulation facilitates the enhancement of technological capabilities that attract such investments. Capital accumulation promotes infrastructure development, thereby attracting foreign investment. Capital accumulation significantly enhances enterprises' financing ability and reduces investment risks, consequently augmenting foreign direct investment inflows. This outcome corresponds with several studies that have demonstrated a favorable association between fixed capital accumulation and foreign direct investment, as noted in the research by Singhania and Saini (2017).

The negative impact of imports on foreign direct investment indicates that an increase in import volume reduces demand for domestic production, heightens competition with local products, and displaces domestic goods. This condition increases costs for local enterprises, leading to a reduction in total demand, which in turn diminishes foreign direct investment levels. Research demonstrates that a 1% rise in Jordanian imports is associated with a 6.18% decline in foreign investment, a statistically significant result. Connecting this outcome to the efficacy of Development Zonesprovides a more cohesive understanding. Limiting investors in these zones from importing particular raw materials from designated nations exerts financial strain, since it obstructs their capacity to pursue cost advantages for these vital commodities. This scenario negatively affects product pricing and reduces competitive advantages in international markets, ultimately resulting in diminished demand.

The exchange rate shown no statistically significant effect on foreign direct investment. This may be attributed to the fierce competition between international and indigenous companies in the Jordanian economy. The exchange rate has minimal impact on foreign direct investment in this case. The Jordanian economy advantages from political stability amid a tumultuous international

environment, which conceals the influence of the currency rate on foreign direct investment endeavors.

The positive and statistically significant impact of workers' remittances on foreign direct investment in the long run is attributed to the essential function of remittances in increasing income levels, which then boosts demand for goods and services and raises local consumption. The rise in aggregate demand subsequently draws foreign direct investment. Workers' remittances augment foreign direct investment by 6.11%, signifying their substantial role in fostering foreign direct investment in Jordan. The Central Bank of Jordan asserts that workers' remittances substantially impact the Jordanian economy by fostering local development. This result may be linked to the detrimental impacts of Development Zonesin Jordan, as indicated by the increase in remittances from foreign laborers in specific districts, which may constitute nearly 60% of the total workforce in particular locales. The considerable volume of remittances may negatively impact the components of the balance of payments, seen as a crucial channel for affecting foreign direct investment.

4.6 Short-Run Analysis of Development Zonesand FDI

The evaluation of the second model, intended to analyze the short-term impacts of Development Zoneson foreign direct investment, revealed a linear regression coefficient of R^2 at 0.93, R^2 at 0.87, and a Durbin-Watson statistic of 2.07, signifying no autocorrelation within the model. Furthermore, it clarifies the assessment of short-term impacts and the error correction mechanism (ECM) related to Development Zonesand foreign direct investment in Jordan. The findings are detailed in Table 6, which demonstrated that Development Zonesnegatively impacted foreign direct investment.

The negative impact of Development Zoneson foreign direct investment has emerged in the short term, indicating that these zones fail to achieve their intended goals, which raises questions about their operational effectiveness and the challenges they face in increasing foreign direct investment levels. This is attributed to the reduced return on investment in special economic zones, which presents a significant obstacle for investors. The principal aim of investing in Development Zonesis to generate capital through earnings from the investment process and their accumulation; nevertheless, a low return on investment compromises this aim. As a result, the ongoing inadequate return on investment will compel investors to pursue alternative opportunities for enhanced earnings, capital growth, and the achievement of their investment goals, Abu Riash's study (2022) indicated that investors in the economic zones perceived these zones as neither supportive nor aligned with their ambitions. Investors see insufficient assistance and seek to improve the attractiveness and readiness of these zones.

Table 6. ARDL Short-Run Estimation Results

Regressors	Coefficients	t-Statistics
Δ LOG (FDI) (-1)	-0.46***	-4.02
ΔLOG (FCF)	3.10***	5.44
ΔLOG (M)	0.29	0.38
ΔLOG (WR)	3.73***	4.96
ΔRER	-0.77	-0.34
DZ	-3.10***	-8.56
ECM (-1)	-0.63***	-8.08

Note: *, ** and *** denotes significance level at 10%, 5% and 1% respectively. The selection of ARDL (4, 4, 1, 3, 4) based on SIC.

The coefficient of fixed capital accumulation had a positive and statistically significant effect in the short term. A 1% increase in capital accumulation leads to a 3.1% increase in foreign direct investment. This highlights the importance of capital accumulation and its role in improving production capacity and attracting foreign direct investment. The exchange rate adversely influenced, without statistical significance, and did not affect the volume of foreign direct investment in Jordan, both in the short and long term. Nevertheless, the variable of workers' remittances had a positive and statistically significant effect in the near term. When remittances increased by 1%, foreign direct investment escalated by 3.73%. The importance of workers' remittances in bolstering aggregate demand and drawing investments has become apparent.

The coefficient of the error correction term (ECT) is a fundamental criterion for estimating the short-term dynamic model, which measures the adjustment rate required to return to equilibrium after a shock in the dynamic model. Table 5.11 indicates that the coefficient of the lagged error term (ECT (-1)) was negative (-0.636) and statistically significant. The adjustment rate was 64% per annum. The negative sign and significance level indicate the inverse relationship between the factors affecting FDI and Development Zonesin Jordan throughout the study period. The value of -0.636 indicates that, in the current period, a fluctuation in FDI will occur at an adjustment rate of around 63%.

4.7 Diagnostic Test

This section assesses the results of the diagnostic tests conducted on the second study model to confirm the validity of the findings and the suitability of the estimated model. The LM serial correlation test, heteroscedasticity test, normality test, and CUSUM and CUSUMSQ stability tests were conducted. The findings are displayed in Table 7, and Figure 2.

Table 7. Diagnostic Tests

	F-statistics
Serial Correlation X^2 (Breusch-Godfrey LM)	1.09{0.35}
Normality X^2 (Jarque-Bera)	0.95{0.62}
Heteroscedasticity X^2 (Breusch-Pagan-Godfrey)	0.56{0.90}
CUSUM	S
CUSUMSQ	S

Note: The selection of ARDL (4,4,1,3,4) is based on SIC, p-values are in parenthesis and S signifies stable model.
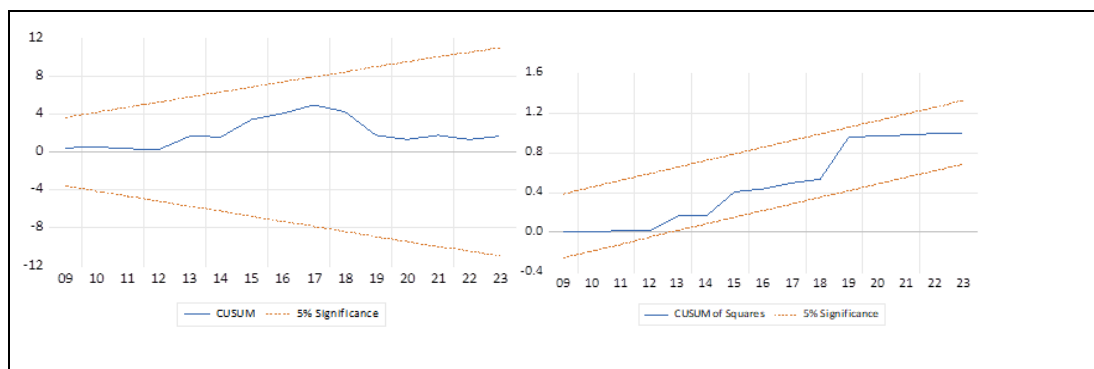

Figure 2.The plot of CUSUM and CUSUMSQ

Table 7 delineates the results of the diagnostic assessments for the second study model, which examines the impact of Development Zoneson foreign direct investment in Jordan. The findings validated the null hypothesis about the absence of first-degree serial correlation, the distribution of residuals, and the lack of heteroscedasticity. The F statistic's p-value surpassed 0.05, indicating a lack of serial correlation and heteroscedasticity in the model, along with the normal distribution of the residuals. Moreover, Figure 5.4 depicts the graphs of both CUSUM and CUSUMSQ, which stayed inside the critical thresholds of 5%, so confirming the model's stability. As a result, the model was precisely identified. The findings indicated that the anticipated coefficients of this model were consistent, impartial, and effective. Thus, these findings can guide policy development and provide recommendations to policymakers.

5. CONCLUSION.

This paper examines the Jordanian experience in establishing Development Zonesand achieving their legitimate objectives, akin to other nations, by analyzing the characteristics of these zones and discussing their investment realities based on the available data. The analysis established that those zones failed to achieve their primary objective, resulting in a performance that fell short of expectations and aspirations. Following an experience exceeding 50 years, a discernible flaw in the operations of those zones has resulted in their divergence from the intended objective of fostering economic growth rates in Jordan.Furthermore, the Development Zonesfailed to enhance economic

growth rates, attract foreign direct investments, or mitigate the deficit in the Jordanian trade balance, indicating that they did not progress toward achieving economic development and prosperity for Jordanian society.

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