Impact of foreign direct investment on the emergence of SMEs in Morocco: Analysis and strategic perspectives

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ABSTRACT

This research investigates the impact of foreign direct investment on the emergence of SMES in Morocco. One of the strategic objectives that Morocco seeks to achieve through its policy of promoting foreign direct investment (FDI) is the exploitation of positive externalities on its national economy. These benefits include encouraging the creation and development of small and medium-sized enterprises (SMEs). This article aims to empirically examine the impact of FDI on the creation of SMEs in Morocco, assessing both long-term and short-term effects. A time series econometric analysis was conducted using Moroccan macroeconomic data covering the period from 2009 to 2022. The study applied a cointegration approach and a vector error correction model (VECM) to assess the relationship between FDI inflows and SME creation. The empirical results reveal that, in the long term, the FDI variable exerts a positive and statistically significant effect on the creation of SME. Conversely, the short-term results show no statistically significant effect, suggesting that the influence of FDI on SME creation does not materialize immediately. FDI is a vital contributor to SME development in Morocco, but its benefits materialize over the long run, necessitating sustained policy efforts to maximize these effects. Policymakers should focus on creating an environment that fosters long-term investments and facilitates the absorption of FDI spillovers, particularly in sectors linked to SME development.

Contribution/ Originality: This work is unusual in that it uses a time series econometric analysis using a VECM technique to simultaneously distinguish between the short-term and long-term impacts of FDI on SME creation in Morocco, filling a gap in understanding the delayed effects of FDI on SME development.

1. INTRODUCTION

Researchers and policymakers are increasingly interested in the influence of foreign direct investment (FDI) on developing nations' economic development. Morocco, in particular, has drawn large FDI flows in recent decades due to its firm commitment to an economic openness approach. These flows are often viewed as a vehicle for economic growth, not only supporting technology transfer and the development of human capital but also encouraging the creation and expansion of small and medium-sized enterprises (SMEs). However, despite extensive research efforts in this area, there are still major gaps in the existing literature.

To begin, the bulk of prior studies have primarily focused on the influence of FDI on overall economic growth or industrial development, often neglecting a specific analysis of its effect on SMEs. Alfaro (2003) for example, focused on the effects of FDI on economic growth but did not go into depth on SMEs. Similarly, Borensztein, De

Gregorio, and Lee (1998) studied the role of FDI in technology transfer and economic growth but not its direct impact on SME creation. These studies rely mostly on cross-sectional techniques, which, although relevant, do not capture the temporal dynamics necessary to understand the evolution of the effect of FDI on SMEs.

At the same time, institutional economic theory, as demonstrated by North (1990) emphasizes the importance of institutions in economic growth. This theory postulates that imposing rigorous restrictions to combat informal activity fosters business formalization and the formation of SMEs. Rodrik (2000) reinforces this perspective by suggesting that these restrictions can foster the formation of a robust and diverse entrepreneurial fabric, thus contributing to formal economic integration. Meyer and Nguyen (2005) contend that the presence of multinationals might indirectly encourage the formalization of local firms by enforcing quality requirements that only formal enterprises can fulfill.

Second, some studies have viewed the impact of FDI from the perspective of the host country's attractiveness without fully exploring how FDI might genuinely help to the formation of a diverse entrepreneurial fabric. Javorcik (2004) for example, explored the impact of FDI on local enterprises by concentrating mostly on spillover effects in manufacturing and not especially on the impact on SMEs. Similarly, Aitken and Harrison (1999) investigated the impact of FDI on the productivity of local enterprises but did not directly address the problem of SME development. Furthermore, the econometric methodologies utilized in some of these studies have not always made it feasible to grasp the long-term effects of FDI, focusing instead on short-term analyses, which may give an incomplete, or even misleading, view of reality.

Finally, the current literature has an open discussion over the net effect of FDI on domestic investment and SME creation. While Borensztein et al. (1998) argue that FDI boosts domestic investment via technical spillovers, other research, such as those by Agosin and Machado (2005) warns of a crowding-out effect in which FDI could replace local enterprises. The findings vary depending on the unique circumstances of each nation and the type of FDI received, as highlighted by the research of Soysa and Oneal (1999) and the recent observations of Bannour, Ben Arab, and Souissi (2017) on the Moroccan economy.

Thus, the purpose of this work is to fill these gaps by offering a unique contribution to the existing literature. Using a time-series approach and macroeconomic data spanning 2009 to 2022, we aim to give an in-depth examination of the influence of FDI on SME development in Morocco. Our approach is distinguished by its ability to capture the long-term consequences of FDI while taking into account the specificities of the Moroccan context.

In addition, we aim to shed light on the mechanisms by which FDI might boost not just the creation but also the long-term growth of SMEs, a dimension that has received less attention in prior research. Political and economic decision-makers need this contribution to understand the levers they can use to optimize the beneficial effects of FDI on the Moroccan company.

Finally, by identifying the flaws in previous research and arguing for our methodological approach, this article seeks to enrich the academic debate on the role of FDI in SME creation by providing strong empirical and theoretical elements that can serve as the foundation for future research in this area.

2. CONCEPTUAL FRAMEWORK

2.1. Definition of FDI

FDI is seen as an instrument that enables firms to conduct and organize their production activities on a global scale where costs and profitability are favorable and/or market prospects are important. Andreff (1996) defines FDI as "capital invested in the ownership of real assets to establish a foreign subsidiary (green field investment) or to take control of an existing foreign enterprise. The goal is to forge enduring economic connections with a foreign unit (Andreff, 1996).

For the OECD: "Direct investment is a transnational investment undertaken by a resident of one economy (the direct investor) to create a long-term stake in a business (the direct investment enterprise) based in another

economy. The investor intends to establish a long-term strategic partnership with the firm, with the goal of exerting substantial influence over management. When the direct investor hold at least 10% of the voting rights in the direct investment company, they create a "lasting interest"(OECD, 2008). It is therefore the criteria of sustainable interest and management control that distinguish a FDI from a portfolio investment.

2.2. Definition of SMEs

For economists, SMEs are structures that contribute significantly to the economic growth and social development of countries. According to the World Bank, SMEs represent nearly 90% of the corporate fabric and are responsible for more than 50% of employees worldwide (World Bank, 2020). In the OECD group of countries, SMEs generates between 50% to 60% of the wealth and employ over 60% of the workforce.

However, finding a universal definition of SMEs valid in all countries of the world remains difficult. Until now, there has been no unanimity among researchers on a standard definition of SMEs because of the heterogeneity of the nature of these entities and the criteria taken into account from one country to another to define it. But practically, each country adopts its own definition of the SME according to criteria, often quantitative, that characterizes it in large companies. Some definitions are based on turnover, while others are based on the number of employees, ownership of share capital, value added, market share, etc.

In Morocco, the definition of SMEs has evolved according to the provisions contained in the various legal texts intended to encourage this category of enterprises. These definitions include the definition of Bank Al Maghrib of 1987, the definition of the investment code promulgated in 1993, and the definition of FOGAM for the upgrading of SMEs.

3. THEORETICAL FOUNDATIONS

The debate on the impact of foreign direct investment (FDI) on small and medium-sized enterprises (SMEs) has given rise to much discussion within the academic community and among policymakers. While some researchers emphasize the potential benefits of FDI in terms of technology transfer, job creation, and local capacity building, others warn of the risks of marginalizing local SMEs in the face of competition from multinationals. This duality of opinion reflects the complexity of the economic dynamics at play, requiring in-depth analysis to grasp the true extent of the impact of FDI on the local entrepreneurial fabric.

Institutional economic theory, as formulated by North (1990) highlights the essential role of institutions in economic growth. According to North (1990), effective institutions play a decisive role in encouraging the formalization of informal economic activities through the introduction of strict regulations. According to the author, institutions play a crucial role in economic development by providing incentive structures that shape economic behavior. Local authorities promote the emergence of small and medium-sized enterprises (SMEs) by introducing regulations that reduce informality, thereby stimulating economic growth and facilitating their integration into the formal economy.

In addition, multinationals establish vertical links with local operators, particularly through subcontracting relationships, which can encourage the creation of new SMEs to meet these needs. In this way, FDI can boost the creation of SMEs in response to growing demand in the domestic market, especially in underdeveloped sectors. However, when FDI enters sectors already occupied by local firms, there is a risk of crowding them out or putting pressure on them to modernize in order to remain competitive.

Rodrik (2000) reinforces this perspective by asserting that these regulations can stimulate the creation of a diversified entrepreneurial fabric, thus contributing to the integration of businesses into the formal economy. By imposing quality standards that only formal entities can meet, the presence of multinationals can indirectly encourage the formalization of local businesses, as Meyer and Nguyen (2005) suggest. Meyer and Nguyen (2005)

stress that FMN's presence can indirectly encourage the formalization of local businesses by requiring quality and compliance standards that can only be achieved within a formal regulatory framework.

a. Vertical linkages: NMFs located in a host country create collaborations with local operators, in particular subcontracting relationships (OECD, 2001, 2002). Indeed, these firms need, as part of their production activities, inputs from subcontracting services and various services (maintenance, maintenance, etc.) that can be provided by existing local operators or by the creation of new enterprises, especially SMEs, for this reason. These links can be established either upstream or downstream.

b. FDI is a factor of economic growth in the host country (Borensztein et al., 1998; De Gregorio, 1992) which results in the creation of SMEs to meet the growing needs on the domestic market.

c. Workers, in particular managers and managers who have previously been employed in MNCs in the host country, may set up their own companies either to act as suppliers for the benefit of these firms or to produce products that are competitive and innovative with those of these multinational manufacturing firms (MMFs) while benefiting from the knowledge, experience, and technologies acquired while working there previously.

d. The conditions that NMFs require to settle in a host country require national public authorities to implement measures and actions to limit informal activities in areas that harm these firms. These measures should incentivize operators involved in these informal activities to establish new businesses that meet the legal requirements for their activities.

Thus, the important question in this context is to what extent FDI contributes to the creation of enterprises in the host country. In other words, does the presence of NMFs in a given country stimulate the creation of new businesses that would not have taken place in the absence of these NMFs or the contrary?

Agosin and Machado (2005) point out that multinationals impose strict conditions to limit informal activities. Indeed, institutional economic theory states that multinational firms (MNCs), before settling in a host country, require local public authorities to put in place strict measures to combat informal activities. This regulatory framework encourages informal sector operators to formalize their activities by creating their own businesses.

Borensztein et al. (1998) explain that the increased competition of NMFs in local product markets and national financial markets can lead to the eviction and replacement of domestic firms (crowding out effect). On the other hand, FDI can foster the growth of local firms (spillover effect) by enhancing their production complementaities through the complementarities or boosting their productivity through technological and human capital spinoffs. In the same context, Markusen and Venables (1999) consider, in their theoretical framework, that it is possible to exist «complementarity effects» between foreign investment and domestic firms. Similarly, Soysa and Oneal (1999) argue that FDI favours domestic investment. When FDI enters sectors where domestic companies are already located, it risks limiting the opportunities for new national investments or squeezing out domestic companies.

Empirical research into the influence of FDI on domestic investment has shown diverse results. Borensztein et al. (1998) discovered that FDI has a beneficial influence on domestic investment, but it is not particularly strong. Similarly, Hassane and Zatla (2001) find a lack of complementarity between FDI and local investment in SEMCs, implying that FDI may push out domestic capital. Kumar and Pradhan (2002) concluded that FDI typically has a negative effect on domestic investment, although they observed two different phases: an initial negative impact followed by an improvement in the second stage. Adams (2009) discovered an initial negative effect of FDI on domestic investment in SSA nations from the 1990s to 2003, which was followed by a favorable effect. More recently, Bannour et al. (2017) found no significant association between FDI and domestic investment in Morocco. Overall, the literature reveals a continuing disagreement concerning the net impact of FDI on domestic investment and SME development. While Borensztein et al. (1998) suggest that FDI promotes domestic investment through technological spillovers, Agosin and Machado (2005) warn of a potential crowding-out effect in which FDI replaces local enterprises.

In a study of three developing regions over the period 1970-1995, Agosin and Machado (2005) found that FDI has led to a remarkable increase in domestic investment in Asia but much less in Africa. On the other hand, they have caused a clear eviction effect in Latin America. Agosin and Machado (2005) propose an explanatory model of the effect of FDI on national investment in terms of two main concepts: «the crowding-out effect» and «the concentration effect». These authors consider that there is crowding out of national investment by FDI when the increase in total investment in the host economy is less than that of FDI, whereas concentration occurs when total investment increases more than the increase in FDI. The advantages of upstream and downstream links with foreign firms, as well as the introduction of new knowledge and technologies previously unavailable to them, explain the positive effect on domestic investment. When FDI operates in undeveloped sectors in the host economy, it will tend to stimulate the creation of new national enterprises. Agosin and Machado (2005) explain that "the entry of a multinational into a sector where there are several national companies can lead the national companies in place to invest to become more competitive. However, given the technological superiority of multinational enterprises, their investments are more likely to displace domestic firms and even cause them to fail than to encourage them to invest." (Agosin & Machado, 2005).

The results vary according to the specific features of each country and the type of FDI received, as highlighted by the research of Soysa and Oneal (1999) and the recent observations of Bannour et al. (2017) on the Moroccan economy.

The majority of previous research has mainly explored the influence of foreign direct investment (FDI) on overall economic growth or industrial development, often to the detriment of a more targeted analysis of its specific impact on small and medium-sized enterprises (SMEs).

For example, Alfaro (2003) analyzed the effects of FDI on economic growth but failed to examine in depth the impact of such investment on SMEs. This gap is also perceptible in the work of Borensztein et al. (1998) who studied the role of FDI in technology transfer and economic growth without directly addressing its impact on SME creation. These studies are mainly based on cross-sectional techniques, which, although relevant for an overall view, do not capture the temporal dynamics essential for understanding the evolution of the impact of FDI on SMEs.

Some research has also examined the impact of FDI by focusing on the attractiveness of the host country without fully exploring how it can actually contribute to the formation of a diversified entrepreneurial fabric. For example, Javorcik (2004) studied the impact of FDI on local firms by focusing mainly on spillover effects in the manufacturing sector without specifically addressing SMEs.

Similarly, Aitken and Harrison (1999) analysed the impact of FDI on the productivity of local firms but did not deal directly with the development of SMEs. Furthermore, the econometric methodologies used in these studies did not always capture the long-term effects of FDI, focusing instead on short-term analyses that can give a partial and sometimes misleading view of reality.

Consequently, the literature review reveals several important gaps in existing research. First, previous studies have largely neglected specific analysis of the effects of FDI on SMEs, focusing more on overall economic growth or industrial development. Second, while institutional economic theory provides valuable insights into the role of institutions and regulations in the formalization of firms, its application to understanding how these mechanisms specifically influence SMEs remains inadequate. Third, research that has explored the impact of FDI on local firms has often limited its analysis to spillover effects in specific sectors or has employed econometric methodologies that do not capture long-term dynamics. Finally, the debate on the net effect of FDI remains open, with results varying according to the specific context of the countries and the types of FDI received.

To fill these gaps, this paper makes a significant contribution using a time series approach and macroeconomic data covering the period from 2009 to 2022. This approach provides an in-depth analysis of the influence of FDI on SME development in Morocco, highlighting the mechanisms by which FDI can foster not only the creation but also the sustainable growth of SMEs while taking into account the specificities of the Moroccan context.

4. RESEARCH METHODOLOGY

4.1. Cointegration Approach and VECM Model

To empirically study the effect of inward FDI flows on the creation of SMEs in Morocco over the long term, we use the econometrics of time series by the cointegration approach and the vector error-corrected model (VECM) based on the studies of Acheampong and Osei (2014); Rehman (2016) and Moujahid and Khariss (2021).

The model and variables are specified after a rigorous analysis of the series' staionarity and model lags. The Johansen cointegration test is used to verify the long-term equilibrium relationships between the variables. This methodology makes it possible not only to explore the long-term relationships between FDI flows and SME creation but also to ensure the robustness and accuracy of the results obtained, taking into account the specific features of the Moroccan context.

So, after specifying the model and the variables of the study, we will proceed to the analysis of the stationarity of the series and the determination of the number of delays of the model. Then, to verify the existence of long-term equilibrium relationships between variables, we apply the Johansen cointegration test. Finally, we conclude our approach by verifying the conformity of the model and discussing the results obtained.

4.2. Model Specification and Data Sources

From the theoretical and empirical literature previously conducted, we specify the theoretical model of our study in the form of the following equation:

$$SMEs = C + 1\,FDIt + \varepsilon t$$

With:

SMEt: Is the variable to explain. It represents the number of annual SME creations in Morocco;

FDIt: Is the explanatory variable. It represents annual net FDI inflows in millions of DH;

εt: Is the error term;

C: Is the constant that is supposed to capture the effect of other factors not specified in the theoretical model.

The data of the study are taken from the database of the Exchange Office and the annual reports of the MarocPME and the Moroccan Observatory of the very small and medium-sized enterprise (OMTPME). The study spans the period from 2009-2022 in Morocco.

5. ANALYSIS OF RESULTS AND IMPLICATIONS OF RESULTS

5.1. Model Estimation and Compliance Testing

5.1.1. Series Stationary Test

The study of the stationarity of time series is an essential step before examining the existence of cointegration relationships between the study variables. Thus, we apply the unit root tests of AugmentedDickey–Fuller (ADF) and the Phillips-Perron (PP) tests. Table 1 shows the results.

Table 1. ADF and PP stationarity test results.

Tests variables	Augmented Dickey–Fuller		Phillips-Perron		Integration order
	In level	In first difference	In level	In first difference	
FDI	-2.323 (0.393)	-4.80* -0.01	-2.04 -0.52	-6.56* -0.00	I(1)
SME	2.130 -1	-6.40* -0.001	-2.30 -0.403	-6.40* -0.001	I(1)

Note: * = The statistical t is higher than the Mackinnon critical value for a tolerance threshold of 5%. Values in parentheses represent probabilities.

Table 1 indicates that the study series are not stationary in level, but they are stationary in first difference. Therefore, both series have an integration order of I(1). These results suggest that there may be a long-term

cointegration relationship between the variable to be explained and the explanatory variable, which is consistent with the conditions of application of the VECM model (Bourbonnais, 2015).

5.1.2. Determination of the Delay Number of the VAR Model

The estimation of the VECM model requires determining beforehand the number of delays (p) of the VAR(p) model. For this, we choose to use the information criteria of Akaike (AIC) and Schwarz (SC).

Table 2. Results of VAR delay number determination(p).

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-43.251	NA	12.843	8.227	8.299	8.181
1	-33.484	14.207	4.625	7.178	7.395	7.042
2	-22.114	12.403*	1.358*	5.838*	6.200*	5.610*
3	-19.154	2.152	2.259	6.028	6.534	5.708

Note: * p < 0.1.

Table 2 presents the results of the VAR lag length determination for the model. Based on the information criteria provided—Log Likelihood (LogL), Likelihood Ratio (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Criterion (SC), and Hannan-Quinn Criterion (HQ)—the optimal lag length is determined to be 2. The table indicates this by marking the lowest value of FPE (1.3588), AIC (5.838), SC (6.200), and HQ (5.6109), with an asterisk (*). Selecting the correct lag length is crucial for ensuring model efficiency and avoiding overfitting. Based on the results of the above information criteria, the number of delays to remember is p = 2. So we will apply the Johansen cointegration test on a VAR(2) model.

5.2. Analysis of Results

5.2.1. JOHANSON Cointegration Test

The Johansen cointegration test makes it possible to check if there is a long-term equilibrium relationship between the endogenous variable and the exogenous variable, which are integrated of the same order. The table below presents the results of this test under the null hypothesis of the absence of cointegration.

Table 3. JOHANSEN cointegration test results.

Hypotheized No. of CE (s)	Eigenvalue	Trace statistic	Critical value	Probability
r=o*	0.685	17.976	15.494	0.020
r ≤1*	0.380	5.265	3.841	0.021

Note: * there is cointegration because the null hypothesis of absence of cointegration was rejected at the 5% threshold (The trace is higher than the critical value).

Table 3 presents the results of the Johansen cointegration test, which examines the existence of long-run relationships between the variables. The test identifies two cointegrating equations at the 5% significance level, as indicated by the asterisks (*). For both hypotheses, $r=0$ and $r \leq 1$, the trace statistic (17.976 and 5.265) exceeds the corresponding critical values (15.494 and 3.841), with probabilities of 0.020 and 0.021, respectively.

This implies the rejection of the null hypothesis of no cointegration, thereby confirming the presence of long-term equilibrium relationships between the variables. Consequently, the results of the trace test show that there are two cointegration relationships at the 5% threshold between the dependent variable and the explanatory variable.

5.2.2. Results of the Estimation of the VECM Model

The tables below present the results of the estimation of our short-term and long-term VECM model by integrating cointegration relationships.

Table 4. Short- and long-term VECM estimation results.

Long-term relationship			
Vector error correction estimates			
Sample (Adjusted): 2012 2022			
Included observations: 11 after adjustments			
Variables	**Coefficient**	**Std. errors**	**t-statistics**
SME	1.000		
FDI	1.212	0.501	**2.419****
C	–5.400		
Short-term relationship			
Dependent variable: DPME			
Variables	Coefficient	Std. errors	t-statistics
CointEq1	-0.824	0.389	-2.114**
D(SME(-1))	0.778	0.529	1.470*
D(SME(-2))	-0.050	0.318	-0.159*
D(FDI(-2))	7.170	5.805	1.235*
D(FDI(-1))	-1.299	1.60	-0.811*
C	-6.986	5.474	-1.276
R-squared	0.710	Log likelihood	-82.255
Adj. R-squared	0.420	Akaike AIC	16.046
Sum sq. resids	2013685	Schwarz SC	16.263
S.E. equation	634.615	Mean dependent	-38.818
F-statistic	2.451	S.D. dependent	833.658

Note: **: Significant variable at 5% threshold.*: Variable non significative.

Table 4 presents the short- and long-term estimation results of the Vector Error Correction Model (VECM) for the relationship between FDI and SME development. In the long-term relationship, the coefficient for FDI is 1.212, with a standard error of 0.501 and a t-statistic of 2.419, indicating significance at the 5% level (**). This suggests a positive long-term impact of FDI on SME growth. In the short-term relationship, the coefficient of the error correction term (CointEq1) is -0.824, with a t-statistic of -2.114, also significant at the 5% level, indicating that any deviation from the long-run equilibrium is corrected by 82.4% in the subsequent period. Other variables, such as the lagged values of SME and FDI, display varying degrees of significance, with some being non-significant (*). The model has an R-squared of 0.710, indicating that 71% of the variation in SME development is explained by the model, with an adjusted R-squared of 0.420.

5.2.3. Autocorrelation Test

To test the autocorrelation of residues, we use the Lagrange multiplier test (LM).

Table 5. Autocorrelation test results (LM).

VEC residual serial correlation LM tests						
Sample: 2009 2022						
Null hypothesis: No serial correlation at lag h						
Lag	**LRE* stat**	**DF**	**Prob.**	**Rao F-stat**	**DF**	**Prob.**
1	5.217	4	0.265	1.839	(4, 4.0)	0.284
2	2.142	4	0.709	0.534	(4, 4.0)	0.720
3	3.300	4	0.508	0.934	(4, 4.0)	0.525

The results of the VEC residual serial correlation LM tests can be seen in Table 5. These tests check to see if there is autocorrelation in the model's residuals. presents the results of the VEC residual serial correlation LM tests, which assess the presence of autocorrelation in the residuals of the model. The null hypothesis tested is that there is no serial correlation at Lag h. At all lags (1, 2, and 3), the p-values for both the LRE* statistic and the Rao F-statistic are greater than 0.05, indicating that the null hypothesis cannot be rejected. This suggests that there is no significant autocorrelation in the residuals of the model, confirming that it is well-specified and does not suffer from serial correlation issues.

5.2.4. Normality Test

Regarding the normality of residues, we apply the Jarque-Bera test.

Table 6. Residue normality test.

VEC residual normality tests			
Null hypothesis: Residuals are multivariate normal			
Sample: 2009 2022			
Component	Jarque–Bera	DF	Prob.
1	0.963	2	0.617
2	0.569	2	0.752
Joint	1.532	4	0.820

Table 6 presents the results of the residual normality test for the VEC model, which assesses whether the residuals follow a multivariate normal distribution. The test includes individual Jarque-Bera statistics for each component as well as a joint test. For each component, the p-values are 0.617 and 0.752, respectively, indicating that we fail to reject the null hypothesis of normality for the individual components. The joint test has a Chi-squared statistic of 1.532 with 4 degrees of freedom and a p-value of 0.820. Since the p-value is greater than 0.05, we also fail to reject the null hypothesis for the joint test. This suggests that the residuals are approximately multivariate normal, meeting the assumption of normality required for accurate model estimation and inference.

Table 7. Heteroscedasticity test of residues.

VEC residual heteroskedasticity tests (Levels and squares)		
Sample: 2009 2022		
Joint test		
Chi-sq	DF	Prob.
24.273	18	0.146

Table 7 presents the results of the heteroscedasticity test of the residuals from the VEC model. The joint test evaluates whether there is heteroscedasticity in the residuals by analyzing both levels and squared residuals.

The Chi-squared statistic is 24.273 with 18 degrees of freedom, and the p-value is 0.146. Since the p-value is greater than 0.05, we fail to reject the null hypothesis, indicating that there is no significant heteroscedasticity in the residuals. This suggests that the residuals have constant variance, and the model does not suffer from issues related to heteroscedasticity.

5.3. Discussion of Results

The results of the various compliance tests applied demonstrate the robustness of our estimated model. In addition, the cointegration equation displays a negative and significant sign(-0.824220) that confirms the presence of an equilibrium relationship over long-term association between the dependent variable and the explanatory variable within the model. This result means that the speed with which the model adjusts to long-term equilibrium after an imbalance is 82%.

The findings from the VECM analysis reveal that, over the long term, foreign direct investment (FDI) has a positive and statistically significant impact on SME creation. This leads us to conclude that, in line with our expectations, incoming FDI flows motivate the creation of SMEs in Morocco. Indeed, a 1% increase in FDI flows leads to an increase of 1.2% in the number of new SME creations in the country.

This outcomes can be attributed to several factors. First of all, the establishment of the FMN, characterized by their enormous financial, technical, and technological capacities, in Morocco has important training effects on the Moroccan economy in terms of technology transfer, development of domestic human capital, and modernization of the national industrial fabric, which are factors in favour of the creation and development of SMEs.

Then, when carrying out their production activities, foreign firms located in Morocco need inputs, subcontracting services, distribution, and other services of maintenance, transport etc. Thus, these firms create related activities around them that offer potential opportunities to create new SMEs to meet the growing needs of these new international operators.

Furthermore, the examination of the sectoral distribution of inward FDI confirms a predominance of the industrial sector as the main attractive FDI sector in Morocco. Indeed, the creation of SMEs is often facilitated by industrial FDI due to the numerous and increasing needs it generates in the market. This type of FDI is, in principle, the most promising in terms of the creation and development of SMEs.

In a similar vein, the penetration of foreign firms in undeveloped or undeveloped sectors in the Moroccan economy should offer crucial opportunities for the creation of new SMEs to meet the upstream and downstream needs of these firms.

On the other hand, the considerable efforts made by the Moroccan public authorities in the framework of the policy of promotion of FDI, in particular as regards the new investment charter, the creation and development of specific areas for investment (free zones, industrial reception areas, industrial zones, etc.), the establishment of regional investment centres (RICs) and other institutions to facilitate and promote the establishment of businesses, the diversified offer of vocational training programmes and the offer of several financial, fiscal and other incentives, are an important aspect that promotes and encourages the creation of SMEs in parallel with the acceleration of the arrival of FDI in Morocco. In the light of the literature review, the results of our study make several important contributions. The compliance tests applied confirm the robustness of the estimated model, and the cointegration equation shows a negative and significant sign (-0.824), indicating the presence of a long-term equilibrium relationship between the dependent variable and the explanatory variable. This indicates that the model adjusts its long-run equilibrium with a speed of 82% after an imbalance.

The VECM results show that, over the long term, FDI flows have a positive and statistically significant effect on SME creation. In fact, a 1% increase in FDI flows leads to a 1.2% increase in the number of new SME start-ups in Morocco. This result is in line with our expectations and corroborated by institutional economic theory, which emphasizes that FDI can stimulate the creation of SMEs by improving the conditions for the transfer of technology and human capital and by creating complementary needs in the local market.

Indeed, the presence of multinationals, which often require subcontracting services and other inputs, generates opportunities for the creation of new SMEs. In addition, the industrial sector, which predominates among foreign investments, is particularly conducive to the creation of SMEs because of the varied needs it generates. The Moroccan authorities' efforts to promote FDI, through reforms and incentives, also play a crucial role in encouraging the creation of SMEs, although constraints remain, particularly in terms of access to finance and land.

In line with the work of Javorcik (2004) our study highlights the positive impact of FDI on local firms, particularly through technological spillover effects. However, Javorcik (2004) approach, which focused mainly on manufacturing and did not directly explore the impact of FDI on SMEs, our results show that the establishment of foreign companies in Morocco can also play a crucial role in the creation and expansion of SMEs, especially when they act as suppliers or subcontractors for multinational companies.

Similarly, although the work of Aitken and Harrison (1999) studied the impact of FDI on the productivity of local firms, their analysis did not directly address the question of SME creation. Our study, on the other hand, highlights the potential role of FDI not only in improving productivity but also in stimulating the creation of new SMEs. This suggests that the effect of FDI on the local economy may be broader than initially envisaged by Aitken and Harrison (1999).

However, our results also reveal a complexity that previous studies have not sufficiently explored. While Javorcik (2004) and Aitken and Harrison (1999) have focused on the positive aspects of FDI, our analysis highlights that the arrival of foreign companies in Morocco can also exert intense competitive pressure on local SMEs. This competition can, in some cases, lead to the bankruptcy of the most fragile or least competitive SMEs, which could qualify the overall beneficial effects of FDI observed in previous studies.

Despite the observed positive impact of FDI on SME creation in the long term, the short-term results do not show a statistically significant effect, thus highlighting the need for time lags for FDI to influence SME creation. In summary, our findings support established notions about the potential advantages of FDI, but they also underscore a murkier element, specifically the potential for local SMEs to face destruction due to heightened competition. This ambivalence highlights the need for a nuanced analysis of the impact of FDI, which takes into account not only the economic benefits but also the associated risks for local businesses.

Despite all these positive aspects, the creation of SMEs still faces a number of constraints. SMEs do not receive adequate support, particularly in terms of access to finance and land.

However, the results of the short-term relationship do not show a statistically significant effect. This shows that FDI does not have an immediate impact on the creation of SMEs but positive long-term effects.

It should be noted that our study has certain limitations, the main one being the insufficient number of observations (13) because of the unavailability of exhaustive data in terms of the annual number of SME creations and their sectoral distribution. Because this limit prevents the integration of other variables that influence the creation of SMEs in Morocco in the equation of the theoretical model of our study, which should allow for more reliable and robust conclusions.

The main limitation of our study is the insufficient number of observations, which limits the integration of other important variables and the robustness of our conclusions, our study contributes to filling the gaps identified in the literature by offering an in-depth analysis of the effects of FDI on SMEs in Morocco, using time-series data and taking into account the specificities of the Moroccan context.

6. CONCLUSION

The article aims to provide empirical evidence regarding the impact of inward FDI flows on the establishment of SMEs in Morocco. For this, we conducted an empirical study using the econometrics of time data by the cointegration approach and the VECM model over a period from 2009 to 2022.

In the long term, the foreign direct investment (FDI) variable has a positive and statistically significant impact on the creation of small and medium-sized enterprises (SMEs). Indeed, inward FDI flows contribute substantially to the increase in the number of SMEs in Morocco. Our analyses indicate that a 1% increase in FDI flows is associated with a 1.2% increase in the number of new SME creations in the country. This result highlights the importance of FDI as a driver of entrepreneurial dynamism and economic development.

In the short term, on the other hand, FDI does not show a statistically significant effect on the creation of SMEs, which suggests that the impact of FDI mainly manifests itself over the long term. This observation suggests that FDI may not impact SME creation immediately; it is pivotal in supporting entrepreneurial and economic growth in the longer term.

One of the primary constraints of this study is the insufficient number of observations, limited to 14 due to the unavailability of exhaustive data. This constraint concerns in particular the annual number of SME creations and

their sectoral distribution. The lack of comprehensive data on these aspects limits the scope and robustness of the conclusions drawn and highlights the need to improve data collection and availability for more thorough and representative future analyses.

Although we recognize the limitations mentioned below, we are committed to exploring new perspectives for our study through an in-depth analysis of the subsectors and specific regions. This approach will not only allow us to understand the current challenges in a more nuanced way but also to identify promising opportunities for sustainable and differentiated growth.

The analysis of subsectors and specific regions plays a crucial role in understanding economic and social dynamics on a finer scale.

Researchers can uncover trends and challenges hidden in a broader picture by examining these smaller units. This approach helps to better target economic policies and social interventions by identifying key sectors of an economy or regions with special needs. Moreover, the study of transmission mechanisms in these specific contexts allows to accurately map how economic policies and shocks spread across different sectors and communities, providing valuable insights to guide decision-makers and investors towards more targeted and effective strategies.

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