The Impact of Financial Development on the Attractiveness of Foreign Direct Investment in the MENA Region

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The Impact of Financial Development on the Attractiveness of Foreign Direct Investment in the MENA Region

Trojette Ines¹
Nestor Odjoumani²

Abstract:

This paper analyzes the role of the quality of governance on financial development to create favorable conditions to attract FDI in the MRNA region. Using a panel data and GMM method from 1985 to 2021, results show that the banking development variables (credit to the private sector) and capital account openness improve the attractiveness of FDI inflows. This effect is higher for countries above the governance threshold. However, the effects of the stock market variables (stock market value traded and capitalization) are significant and positive only in the developed group beyond a certain level of governance. Besides, the impacts of financial variables on the FDI attractiveness are less important in the natural resource endowed countries.

Key-words - Foreign direct investment, financial developement, capital account openness, governance quality, threshold effect.

JEL classification - F21, C26, F43, O16

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Introduction

The role of foreign direct investment has been largely approved as a growth-enhancing factor in the developed and developing countries (Trojette, 2016). FDI is considered as an important element of the world’s growth engine. Therefore countries try to build propitious environment to attract more FDI inflow into their countries (Adhikary, 2011; Bhavan et al., 2011).

The literature identified particularly three categories of determinants of the inward FDI. The first category denotes basic economic factors such as the market size, inflation, natural resources, portfolio diversification strategy. The second category includes trade and the exchange market policies as trade liberalization, exchange rate movements and their volatility\(^3\). The third category is about the aspects of the investment climate: economic factors\(^4\), quality of human capital, financial development, capital account openness, the role of governance\(^5\), foreign aid\(^6\). In addition to these decisive factors of FDI inflows, do foreign firms need locally developed financial services and capital account openness?

In the current literature, little attention has been paid to the importance of financial services and capital account liberalization on attracting FDI inflows given the governance quality. With regards to this, financial services include an easy access to bank credit and to stock market. In this context, financial development should be followed by capital account openness to generate better conditions for FDI inflows. This paper focuses on two factors that determine FDI inflows: capital account openness and financial development with a focus on the governance quality. For this purpose, we use a large sample of developed and developing countries. First, we consider the effect of capital account openness on attracting FDI inflows. Second, this paper examines the role of financial development on FDI, which still remains controversial. We try to bring an answer using the level of governance as a key factor in explaining the mixed results. The Caner & Hansen (2004) method is used to estimate a governance threshold above which capital account openness and financial development impact positively FDI inflows.

This research study differs from the previous studies and contributes to the literature in several ways. Firstly, in order to test the impact of financial development on FDI, we take into account six variables (banking and equity market). Then, we build an index of banking and equity market development. Secondly, while some previous studies have analyzed the effects of FDI and the level of institutions separately, this work demonstrates their interaction effects on FDI inflows for the MENA region. Third, we estimate an institutional threshold above which financial development increases the inflows.

1. Model

Our empirical model takes into account the effect of capital account openness and financial development and is inspired by a theoretical framework from Noy and Vu (2007) and Okada (2013). Our equation can be written as follow:

\(^3\) See Froot et al., (1991)

\(^4\) By economic factors we mean: importance of infrastructure Wheeler & Mody (1992), GDP growth rate, economic integration, commerce and communication.

\(^5\) See Root & Ahmed (1979) and Schneider & Frey (1985) for further information.

Equation:

\[ FDI_{it} = \alpha_1 INFL_{it} + \alpha_2 HK_{it} + \alpha_3 TRADE_{it} + \alpha_4 INST_{it} + \alpha_5 INFRA_{it} + \alpha_6 KAOPEN_{it} + \alpha_7 FD_{it} + \alpha_8 Nat\_Resr_{it} + \mu_i + \epsilon_{it} \]

where \( i \) : is country index and \( t \) : is time index. \( \mu_i \) : is unobserved country-specific effect term, and \( \epsilon_{it} \) is a white noise error term.

The dependent variable is \( FDI_{it} \) : it is the net inflows of Foreign Direct Investment as a percentage of GDP. It represents the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. We use net FDI inflows (FDI inflows minus repatriated investments).

**Independent variables:** INFL (inflation), HK (human capital), TRADE (trade openness), INST (institutions), infrastructure (INFRA), natural resources (Nat_Resr), financial development (FD). **Period of study:** 1984 to 2020. **Database:** World Development Indicators, UNCTAD, ICRG. **Sample:** 18 MENA countries.

**Banking development indicators**

**A) Liquid liabilities**
- It is the currency plus demand and interest-bearing liabilities of banks and non bank financial intermediaries) divided by GDP.

**B) Bank Assets**
- The second indicator is bank assets (ASSETS) which is equal to the ratio of the total assets of deposit money banks divided by GDP.

**C) Private credit**
- the private credit by deposit money banks and other financial institutions to GDP.
- We build an index of banking sector development (BANKING INDEX) that aggregate the information contained in the individual indicators using the method of Demirgüç-Kunt & Levine (1996b).

\( X' \) is the average value of variable X across all countries in the panel over the period of observation for each one.

**Stock market development indicators**

**A) Market Capitalization (CAPIT)**
- It is equal to the ratio of the value of domestic equities (that are traded on domestic exchanges) to GDP.

**B) Total value traded (TRADED)**
- It equals the total value of domestic equities traded on each country's major stock exchanges as a percentage of GDP. It should therefore positively reflect liquidity on an economy wide basis.

**C) Turnover ratio (TURN)**
- It is equal to the total value of domestic shares traded divided by market capitalization.

We build a stock MARKET INDEX based on the same formula.
2. Methodology

In our study we use the system GMM approach. It is an appropriate method to tackle the problem of endogeneity of financial development (FD) and institutions (INST) variables. Instruments of financial development following the method of Lewbel (2012).

3. Results

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFRA</td>
<td>0.241***</td>
<td>0.274***</td>
<td>0.244***</td>
<td>0.447***</td>
</tr>
<tr>
<td>TRADE</td>
<td>0.112***</td>
<td>0.086***</td>
<td>0.172***</td>
<td>0.041***</td>
</tr>
<tr>
<td>INFL</td>
<td>-0.150***</td>
<td>0.135</td>
<td>-0.0341**</td>
<td>-0.0217</td>
</tr>
<tr>
<td>Observations</td>
<td>550</td>
<td>430</td>
<td>550</td>
<td>430</td>
</tr>
<tr>
<td>Sargan P-value</td>
<td>0.143</td>
<td>0.211</td>
<td>0.253</td>
<td>0.192</td>
</tr>
</tbody>
</table>

- **positive impact of TRADE on FDI**: indicates that countries in which trade is important also have relatively higher FDI. Thus, performing a more liberal economic policy would undoubtedly attract more foreign investment.

- **negative effect of inflation on FDI**: suggests that the macroeconomic instability is not effective in attracting FDI inflows (Khan & Nawaz, 2010). may rise uncertainty about the future. FDI always privileges low and controlled inflation (Kamar & Bakardzhieva, 2005).

- **positive coefficient of infrastructure (INFRA)** indicates that investment in the physical infrastructure improves the investment climate for FDI.

Table 2: The impact of financial development on FDI

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BANKING INDEX</td>
<td>0.113**</td>
<td></td>
<td>0.104**</td>
<td></td>
</tr>
<tr>
<td>BANKING INDEX*INST</td>
<td></td>
<td>0.155***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARKET INDEX</td>
<td>0.125**</td>
<td></td>
<td>0.088*</td>
<td></td>
</tr>
<tr>
<td>MARKET INDEX*INST</td>
<td></td>
<td></td>
<td>0.134***</td>
<td></td>
</tr>
</tbody>
</table>

• The development of the banking sector fosters FDI inflows in the MENA countries.

Indeed, a higher level of BANKING INDEX can rise FDI

- directly by improving firms’ ability to cover the fixed costs of FDI with outside capital.
- indirectly, by fostering domestic activity (Desbordes & Wei, 2014).
The evolution of the stock market sector plays a major role in attracting FDI to the country. In this context, Agarwal & Mohtadi (2004) find that FDI is positively associated with equity financing in the short run, but not in the long run.

**Table 3: The impact of financial development on FDI**

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Sample A: resource endowed countries</th>
<th>Sample B: non resource endowed countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>INFRA</td>
<td>0.041*</td>
<td>0.178</td>
</tr>
<tr>
<td>HK</td>
<td>0.197***</td>
<td>0.083***</td>
</tr>
<tr>
<td>TRADE</td>
<td>0.141***</td>
<td>0.160*</td>
</tr>
<tr>
<td>INFL</td>
<td>-0.0366</td>
<td>-0.015</td>
</tr>
<tr>
<td>INST</td>
<td>0.081**</td>
<td>-0.121</td>
</tr>
<tr>
<td>BANKING INDEX</td>
<td>0.153</td>
<td></td>
</tr>
<tr>
<td>MARKET INDEX</td>
<td>0.082</td>
<td></td>
</tr>
</tbody>
</table>

- BANKING INDEX and MARKET INDEX are significantly and positively related to FDI only in non resource endowed countries.
- These results mean that financial development matters more for foreign investors operating in non resource endowed countries. Furthermore, we highlight that the impacts of infrastructure and openness are higher and more significant on FDI for in these countries.

In addition, the positive impact of institutions on FDI inflows is greater in non-resource endowed countries. An increase by 1% in the variable institutions increases the attractiveness of FDI inflows by 0.08% in sample A in comparison to a raise by 0.20% in sample B.

**Table 4: The impact of financial development on FDI**

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BANKING INDEX</td>
<td>0.113**</td>
<td>0.104**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BANKING INDEX*INST</td>
<td></td>
<td></td>
<td>0.155***</td>
<td></td>
</tr>
<tr>
<td>MARKET INDEX</td>
<td>0.125**</td>
<td></td>
<td>0.088*</td>
<td></td>
</tr>
<tr>
<td>MARKET INDEX*INST</td>
<td></td>
<td>0.134***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• The additional effect of institutions increases the impact of BANKING INDEX on FDI by 0.155. The BANKING INDEX impacts FDI inflows differently depending on the level of institutions.

• A supplementary institutional effect by 0.134 for the effect of MARKET INDEX on FDI.

□ For these reasons, we estimate a critical institutional level that allows the BANKING INDEX to increase the impact on FDI.

Table 5: Institutional threshold

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BANKING INDEX*(INST&lt;= γ_2)</td>
<td>-0.065</td>
<td></td>
</tr>
<tr>
<td>BANKING INDEX*(INST&gt; γ_2)</td>
<td>0.161**</td>
<td></td>
</tr>
<tr>
<td>MARKET INDEX*(INST&lt;= γ_3)</td>
<td>-0.012</td>
<td></td>
</tr>
<tr>
<td>MARKET INDEX*(INST&gt; γ_3)</td>
<td>0.122**</td>
<td></td>
</tr>
<tr>
<td>Threshold</td>
<td>γ_2=0.73</td>
<td>γ_3=0.79</td>
</tr>
</tbody>
</table>

• Institutional level for banking development is 0.73

□ Countries with an institutional level higher than 0.73, the effect of banking development on the attractiveness of FDI increases to 0.161. While this effect is 0.055 if we don’t consider the division by the institutional level.

We highlight here that few MENA countries have an institutional level higher than 0.73.

It may be the low level of institutions that impedes countries to attract FDI through financial development.

Figure 1: predicted values of the effect of BANKING INDEX on FDI for countries under and beyond the institutional level of 0.73.
This figure shows that there is a positive relation between the BANKING INDEX and FDI only for countries above the level 0.73 (green line). Nevertheless, the relation is negative for countries below 0.73 (blue line).

Even if the coefficient of BANKING INDEX*INST is positive and significant on FDI, we clearly show that the effect can be different depending on the institutional level.

**Table 6: Threshold effect of market index**

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BANKING INDEX* (INST &lt;= (\gamma_2))</td>
<td>-0.065</td>
<td></td>
</tr>
<tr>
<td>BANKING INDEX* (INST &gt; (\gamma_2))</td>
<td>0.161**</td>
<td></td>
</tr>
<tr>
<td>MARKET INDEX* (INST &lt;= (\gamma_3))</td>
<td></td>
<td>-0.012</td>
</tr>
<tr>
<td>MARKET INDEX* (INST &gt; (\gamma_3))</td>
<td>0.122**</td>
<td></td>
</tr>
<tr>
<td>Threshold</td>
<td>(\gamma_2=0.73)</td>
<td>(\gamma_3=0.79)</td>
</tr>
</tbody>
</table>

This threshold for market index is equal to 0.79. It indicates the level above which institutions increase the impact of stock market on FDI inflows. The latter would mean that the effect of MARKET INDEX on FDI is different depending on the institutional level.

**Table 7: The effect of the components of banking and stock market development on FDI**

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1)</th>
<th>(2)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LL</td>
<td>0.171**</td>
<td>0.084*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LL*INST</td>
<td>0.041**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREDIT</td>
<td>0.120**</td>
<td>0.069**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREDIT*INST</td>
<td></td>
<td></td>
<td>0.091***</td>
<td></td>
</tr>
</tbody>
</table>

- CREDIT to private sector has a positive effect on FDI.
- The higher the credit to the private sector, the higher is the possibility to get financing on the local market.
- Access to credit is also attractive for foreign investors when they seek expansion of their production capacity and growth.

Example Egypt, which has a ratio of LL by 29.19%. If it raises its ratio of LL to the average of the sample 53%, it will annually improve the attractiveness of FDI by 0.10%.
Example Tunisia has a ratio of CREDIT by 24.7 %. If it increases its ratio to the average of the sample 42.57% then it will annually increase FDI by 0.06%.

Table 8: Threshold effect of the components of financial development on FDI inflows (Summary)

<table>
<thead>
<tr>
<th>Dependent Variable : FDI inflows</th>
<th>VARIABLES</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LL*(INS&lt;=ɣ₁)</td>
<td>0.051</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LL*(INS&gt;ɣ₁)</td>
<td>0.171***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREDIT*(INS&lt;=ɣ₂)</td>
<td>0.052</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREDIT*(INS&gt;ɣ₂)</td>
<td>0.042***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threshold</td>
<td>ɣ₁=0.68</td>
<td>ɣ₂=0.70</td>
<td></td>
</tr>
</tbody>
</table>

Results clearly show that a good level of institutions conditions the positive effect of LL and CREDIT on FDI inflows. The significant effect of LL and CREDIT on FDI inflows is only observed above the institutional level of 0.68 for LL and 0.70 for CREDIT.

Table 9: Threshold effect of the components of financial development on FDI inflows (Summary)

<table>
<thead>
<tr>
<th>Dependent Variable : FDI inflows</th>
<th>VARIABLES</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRADED*(INS&lt;=ɣ₆)</td>
<td>-0.110**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRADED*(INS&gt;ɣ₆)</td>
<td>0.084**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPIT*(INS&lt;=ɣ₇)</td>
<td>-0.035**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPIT*(INS&gt;ɣ₇)</td>
<td>0.179**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threshold</td>
<td>ɣ=0.72</td>
<td>ɣ=0.75</td>
<td></td>
</tr>
</tbody>
</table>

- This threshold is 0.72 for TRADED and 0.75 for CAPIT.
- For the variable TRADED, we find only 2 countries (Qatar, and Saudi Arabia) are able to benefit from their high value of stock market value traded to attract FDI.
- Countries must have high level of institutional quality which means government stability, strong legal and judiciary system, low level of corruption etc.
Figure 6 points out that without a high level of institutional quality, countries cannot benefit from the development of stock market value traded to attract FDI inflows. We highlight a great gap between countries below and above the threshold. For CAPIT (capitalization) we found an institutional threshold of 0.75.

4. Conclusion

This paper aims at investigating the impact of financial development and capital openness on FDI by level of governance using a sample of developed, developing and transition countries. Our key results highlight that governance improve the effect of capital account openness, private credit and stock market value traded on the attractiveness of FDI.

On the one hand, private credit and liquid liabilities have a positive effect regardless the institutional level. However, we clearly note that countries with higher institutional quality benefit more from the development of the banking sector to attract FDI.

On the other hand, countries will not be able to attract FDI through stock market value traded and capitalization unless they reach the institutional threshold.

We highlight that the threshold of the institutional index of stock market is higher than the one of banking development.

The weakness of the level of financial development is a constraint for MENA countries to attract FDI inflows. However, financial development is less important for the attractiveness of FDI in the natural resource endowed countries because the aim of foreign investors is to exploit the natural resources.
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