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## The Impact of Inflation on Financial Sector Performance in Euro-Mediterranean Countries

Magdy A. El-Shourbagui

### Abstract

The purpose of this paper was to measure the impact of inflation on financial sector performance in six Euro-Mediterranean countries during the period 1988-2003 using fixed effects panel data models with country and time specific fixed effects. Overall, the results indicate, first, that there is a significant and negative impact of inflation on both banking sector development and stock market performance, and second, that there is a strong negative impact of inflation on financial sector performance if inflation rate is above the threshold rate of inflation which is estimated at roughly 8 %. The policy implication is that inflation hurts financial sector performance once it exceeds this threshold.

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(1) ستم الإشارة في متن الورقة إلى المراجع باللغة العربية بعد ترجمة أسماء المؤلفين بينما يتم إثبات المراجع باللغة الأصلية.

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$$Y_{it} = \mu_i + \beta_1' X_{it} I(q_{it} \leq \gamma) + \beta_2' X_{it} I(q_{it} > \gamma) + e_{it} \quad (1)$$

$i=1, \dots, N, t=1, \dots, T$

$N \quad T$

- = i
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- = TN
- =  $\mu_i$
- = Y
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- = q
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$$Y_{it} = \begin{cases} \mu_i + \beta'_1 X_{it} + e_{it}, & q_{it} \leq \gamma \\ \mu_i + \beta'_2 X_{it} + e_{it}, & q_{it} > \gamma \end{cases}$$

$$Y_{it} = \mu_i + \beta' X_{it}(\gamma) + e_{it} \quad (2)$$

$$\beta = (\beta'_1 \beta'_2)'$$

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$$\bar{Y}_i = \mu_i + \beta' \bar{X}_i(\gamma) + \bar{e}_i \quad (3)$$

$$(3) \quad (2)$$

$$Y_{it}^* = \beta' X_{it}^*(\gamma) + e_{it}^* \quad (4)$$

$$Y_{it}^* = \bar{Y}_i - Y_{it}$$

$$X_{it}^* = \bar{X}_i - X_{it}$$

$$e_{it}^* = \bar{e}_i - e_{it}$$

$$Y^* = X^*(\gamma)\beta + e^* \quad (5)$$

$$\gamma \quad \beta$$

$$\hat{\beta}(\gamma) = (X^*(\gamma)' X^*(\gamma))^{-1} X^*(\gamma)' Y^* \quad (6)$$

$$\hat{e}^*(\gamma) = Y^* - X^*(\gamma)\hat{\beta}(\gamma) \quad (7)$$

$$S_1(\gamma) = \hat{e}^*(\gamma)' \hat{e}^*(\gamma) \quad (8)$$

$$= Y^*(I - X^*(\gamma)'(X^*(\gamma)' X^*(\gamma))^{-1} X^*(\gamma)) Y^*$$

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$$\hat{\gamma} = \arg \min_{\gamma} S_1(\gamma) \tag{9}$$

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$$1 = 2$$

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$$LR_0 = (S_0 - S_1(\gamma)) / \hat{\sigma}^2 \tag{10}$$

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$$= \hat{\sigma}^2$$

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$$FSP_{it} = \beta_1(1-d_{it}^{\Pi^*})(1/\Pi_{it} - 1/\Pi^*) + \beta_2(d_{it}^{\Pi^*})(1/\Pi_{it} - 1/\Pi^*) + \Theta'X_{it} + e_{it} \quad (11)$$

$i=1,\dots,N, t=1,\dots,T$

$$d_{it}^{\Pi^*} = \begin{cases} 1 & \text{if } \Pi_{it} > \Pi^* \\ 0 & \text{if } \Pi_{it} \leq \Pi^* \end{cases}$$

|         |            |      |                     |
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|         | :] :       |      | :                   |
|         |            |      | = FSP               |
|         |            | · [  |                     |
|         |            | ·    | = $\Pi$             |
|         |            | ·    | = $\Pi^*$           |
| $\Pi^*$ | $\Pi_{it}$ |      | = $d^{\Pi^*}$       |
|         |            |      | = X                 |
|         | :          |      | = LPCI              |
|         |            | LPCI | = LPCI <sup>2</sup> |
|         |            | LPCI | = LPCI <sup>3</sup> |
|         |            |      | = IFI               |
|         |            | IFI  | = IFI <sup>2</sup>  |
|         |            | IFI  | = IFI <sup>3</sup>  |
|         |            |      | = IQ                |
|         |            |      | = e                 |

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$$\begin{pmatrix} \hat{\beta}_1 \\ \hat{\beta}_2 \end{pmatrix} = \begin{pmatrix} (1/\Pi_{it}) \\ (1/\Pi_{it}) \end{pmatrix} \begin{pmatrix} \hat{\beta}_2 \\ \hat{\beta}_1 \end{pmatrix}$$

$(\hat{\beta}_1 > 0)$



$$(\hat{\beta}_2 < 0) \quad \hat{\beta}_2$$

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(4) تتراوح قيمة مؤشر الحرية الاقتصادية بين صفر (انعدام الحرية الاقتصادية) وواحد (حرية كاملة) وتصنيف الدول بأنها ذات حرية اقتصادية مرتفعة إذا كانت قيمة مؤشرها 7 أو أكثر بينما تصنف الدول ذات المؤشر الذي تقل قيمته عن 5 بأنها ذات حرية اقتصادية منخفضة.

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| قيمة الاحتمال | إحصائية هانس | القيمة المقدرة للمعدل الحرج للتضخم | المتغير التابع           |
|---------------|--------------|------------------------------------|--------------------------|
| 0.070         | 20.809*      | 8.154                              | مؤشر أداء القطاع المصرفي |
| 0.136         | 16.293       | 60.369                             | مؤشر أداء سوق الأسهم     |

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| 2.807<br>(0.65)    |  |
| 191.929*<br>(2.37) |  |
| 8.225**<br>(3.49)  |  |
| 0.758**<br>(5.34)  |  |
| 3.017<br>(0.55)    |  |
| -14.287<br>(0.45)  |  |

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| قيمة معامل الانحدار<br>(إحصائية زد) |  |
|-------------------------------------|--|
| 18.442**<br>(2.61)                  | معدل التضخم المنخفض  |
| 190.165*<br>(2.58)                  | معدل التضخم المرتفع  |
| 8.553**<br>(3.14)                   | لوغاريتم متوسط نصيب الفرد من الناتج المحلي الإجمالي الحقيقي. |
| 0.796**<br>(5.82)                   | الاندماج المالي الدولي                                       |
| -11.444<br>(1.33)                   | الجودة المؤسسية  |
| 57.605<br>(1.39)                    | الحد الثابت  |

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| معامل الانحدار     |   |
| -0.173*<br>(1.8)   | معدل التضخم   |
| 4.053*<br>(1.79)   | لوغاريتم متوسط نصيب الفرد من الناتج المحلي الإجمالي الحقيقي       |
| -0.952**<br>(4.20) | تربيع لوغاريتم متوسط نصيب الفرد من الناتج المحلي الإجمالي الحقيقي |
| 0.185*<br>(1.89)   | الاندماج المالي الدولي  |
| -0.002*<br>(1.73)  | تربيع الاندماج المالي الدولي                                      |
| 8.786**<br>(11.89) | الجودة المؤسسية   |

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(5) تم إختبار، وتأكدت، استقلالية متغيري معدل التضخم ومتوسط الدخل الحقيقي للفرد كل على حدة.

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| <p style="text-align: right;">■</p> <p style="text-align: center;">(Online)</p> <p><a href="http://www.imfstatistics.org/imf/ifsbrowser.aspx?branch=ROOT">http://www.imfstatistics.org/imf/ifsbrowser.aspx?branch=ROOT</a></p>  | <p style="text-align: right;">■</p> <p style="text-align: right;">■</p> <p style="text-align: right;">■</p>   |
| <p style="text-align: center;">■</p> <p>(<a href="http://millenniumindicators.un.org/unsd/snaama">http://millenniumindicators.un.org/unsd/snaama</a>)</p>   | <p style="text-align: right;">■</p> <p style="text-align: right;">1990</p>                                    |
| <p>Gwartney, James and Robert Lawson (2005)</p>   | <p style="text-align: right;">■</p> <p style="text-align: center;">)</p> <p style="text-align: center;">(</p> |