

INTERNATIONAL NETWORK FOR ECONOMIC RESEARCH

Financial development and macroeconomic performance: a cointegration approach

Cândida Ferreira¹

¹ ISEG, UL – Lisbon School of Economics and Management of the Universidade de Lisboa, UECE - Research Unit in Complexity and Economics, and REM – Research in Economics and Mathematics.

The author acknowledges financial Support from FCT – Fundação para a Ciência e Tecnologia (Portugal), national funding through research grant UIDB/05069/2020.

We test the existence of long-term relations, measured through cointegration, between all the IMF financial development indices and some macroeconomic performance indicators, applying panel cointegration tests in a panel with 46 countries over the interval 1990-2017. The results obtained clearly point to the existence of cointegration between the financial development indices not only with the real Gross Domestic Product, but also with the inflation, the unemployment rate, with the current account, and with the net international investment position. Moreover, the results related to the specific aspects addressed by the IMF indices very well demonstrate that much more important than the simple access to or the depth of the financial institutions and markets is the efficiency of these institutions and markets.

This brief is based on Ferreira (2020) demonstrating that financial development is cointegrated with macroeconomic performance and confirming that the development and diversity of the financial systems across countries require multiple indicators to measure financial development.

During the last decades, the importance of the banking sector performance to economic growth has been subject of intense theoretical debates and empirical studies, namely after the important King and Levine (1993) contributions.

Despite the overall consensus that financial development is relevant to economic growth, several studies (at least since Khan and Senhadji, 2000) underline that the size of the effects may vary with the estimation methods, data frequency, the defined functional forms of the relationships and particularly with the variables chosen as financial development indicators.

More recently, Bijlsma et al. (2018) performed a meta-analysis on 551 estimates from 68 empirical studies that take private credit to GDP as a measure for financial development, confirming that the analysed empirical studies on the finance-growth relationship show a wide range of estimated effects. They also concluded that overall, there was a positive but decreasing effect of financial development on growth.

The relevance of the indicators chosen to represent financial development is very well highlighted, for example, in Sahay et al. (2015) who developed a new very encompassing financial index that is also very clearly presented and discussed in Svirydzhenka (2016). The new financial development index is nowadays provided by the International Monetary Fund and includes nine indices reflecting three relevant dimensions of the financial institutions and markets: the depth (size and liquidity), the access (ability of individuals and companies to access financial services) and the efficiency (ability of the institutions to provide financial services at low costs and with sustainable

revenues and the level of activities of financial markets).

Our study contributes to the literature by using two of the most popular panel cointegration tests: the Pedroni (1999, 2004), and the Westerlund (2007) tests, to analyse the cointegration of these nine financial indices with the macroeconomic performance, represented not only by the real Gross Domestic Product (GDP), but also by other relevant macroeconomic indicators, namely the inflation (proxied by the GDP deflator), the unemployment rate, the current account, and the net international investment position over the period 1990–2017.

The results obtained clearly show that financial development is cointegrated with all the indicators measuring macroeconomic performance and very strongly with the unemployment rate, the current account, and the net international investment position. A more detailed analysis of the results demonstrates that overall, cointegration with the Financial Markets Index is at least as strong as the cointegration with the Financial Institutions Index, indicating that the macroeconomic performance of the considered countries is clearly cointegrated not only with the development of the financial institutions but also with the development of the financial markets. Another relevant conclusion is that the efficiency of both the financial institutions and the financial markets are much more cointegrated with the economic performance of the considered countries than the simple access or the depth of the financial institutions and markets.

Policy Implications

In the long run the development of both the financial institutions and financial markets, are strongly cointegrated not only with the real GDP but also with other relevant indicators of macroeconomic performance, such as the inflation, the unemployment rate, the current account, and the net international investment position. Also, much more important than the simple access to or the depth of the financial institutions and markets is the efficiency of these financial institutions and markets, that is, their ability to provide financial services at low costs and with sustainable revenues.

References

- Bijlsma, M., Kool, C., and Non, M. (2018). The effect of financial development on economic growth: a meta-analysis. *Applied Economics*, 50 (57), 6128-6148, <https://doi.org/10.1080/00036846.2018.1489503>.
- Ferreira, C. (2020). Financial development and Macroeconomic performance: a cointegration approach. Working Papers REM 2020/0155, ISEG - Lisbon School of Economics and Management, REM, Universidade de Lisboa.
- Khan, M. S., and Senhadji, A. (2000). *Financial Development and Economic Growth: An Overview*, IMF WP/2000/209, (ISBN/ ISSN:9781451874747/1018-5941).
- King, R., and Levine, R. (1993). Finance, entrepreneurship and growth: theory and evidence. *Journal of Monetary Economics*, 32 (3), 513-542. [https://doi.org/10.1016/0304-3932\(93\)90028-E](https://doi.org/10.1016/0304-3932(93)90028-E)
- Pedroni, P. (1999). Critical values for cointegration tests in heterogeneous panels with multiple regressors. *Oxford Bulletin of Economics and Statistics*, 61 (S1), 653-670, <https://doi.org/10.1111/1468-0084.0610s1653>.
- Pedroni, P. (2004). Panel cointegration: Asymptotic and finite sample properties of pooled time series tests with an application to the PPP hypothesis. *Econometric Theory*, 20 (3), 597-625, <https://doi.org/10.1017/S0266466604203073>.
- Sahay, R., Cihak, M., N'Diaye, P., Barajas, A., Bi, R., Ayala, D., Gao, Y., Kyobe, A., Nguyen, L., Saborowski, C., Svirydzenka, K. and Yousefi, S.R. (2015). *Rethinking Financial Deepening: Stability and Growth in Emerging Markets*, IMF Staff Discussion Note, SDN/15/08, (ISBN/ISSN:9781498312615/2221-030X).
- Svirydzenka, K. (2016). *Introducing a New Broad-based Index of Financial Development*, IMF WP/16/5, (ISBN/ISSN:9781513583709/1018-5941).
- Westerlund, J. (2007). Testing for Error Correction in Panel Data, *Oxford Bulletin of Economics and Statistics*, 69 (6), 709-748. <https://doi.org/10.1111/j.1468-0084.2007.00477.x>.



Website:

<https://infer-research.eu/>



Contact:

florina-cristina.badarau@u-bordeaux.fr



Email:

info@infer.com