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Evidence from an emerging market economy on the dynamic connection between financial development and economic growth

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ABSTRACT

The main goal of this research article is to analyze the dynamic finance-growth connection using Jordan's developing market economy as a case study. For this, indicators of financial development for the relatively long-term period 1980–2020 have been compiled. This relationship is investigated using bounds testing within the autoregressive distributed lag (ARDL) approach. The estimations of both the long-term ARDL model and the short-term ECM model indicate that financial development is crucial to increasing Jordan's economic growth. In addition, the ECT suggests that the convergence of the economic growth process will achieve the long-term equilibrium path through the channels of financial development at a rather rapid rate of adjustment. In contrast, both long-term and short-term empirical results support an inverse link between the real interest rate and economic growth. This study's findings are consistent with the theoretical and empirical arguments of the supply-leading hypothesis, which states that financial development is the driving force behind economic growth. The findings have policy implications, implying that the financial systems of emerging markets are susceptible to interest rate policies. Consequently, the findings have significant ramifications for policymakers who wish to preserve financial development and improve the economic growth of emerging economies.

Introduction

The link between financial development and economic growth is one of the most disputed topics among development economists. Various perspectives on the role of financial development in economic growth have been presented in the literature over time. For instance, Bagehot (1873) and Hicks (1969) assert that the financial system's function of capital mobilisation has played a substantial part in quickening industrialization in England. Consistently, Schumpeter (1912) argued that well-functioning financial systems foster technical innovation by supporting new ventures, which in turn increases their likelihood of success. According to Blackburn and Hung (1998), the positive relationship between economic growth and the scope of financial activity is evident. They stressed that in contemporary economies, financial institutions play a crucial role in allocating deposits to viable enterprises, thereby enhancing capital productivity and increasing economic growth. Based on Levine's (1997) arguments, the financial revolution was a prerequisite for the industrial revolution. Also, Coricelli and Roland (2008) asserts that the financial system is a crucial source for financing various economic activities, particularly during boom times. In addition, he argues that the temporary credits supplied by the financial industry have significant ramifications for other economic sectors, particularly during difficult times.

Robinson (1952) argues that the growth of actual economic activities is the primary source of financial development. According to this reasoning, a rise in economic activity leads to a rise in financial arrangements, which in turn increases the demand for various financial services and transactions, hence promoting the development of the financial system in reaction to these changes. So, the rate of economic growth depends on a number of factors, such as financial policies, financial structure, financial arrangements, the regulatory environment, technological advances, and human capital (see Greenwood &

Abbreviations: **ADF**, Augmented Dickey Fuller; **ARDL**, Autoregressive Distributed Lag; **ECM**, Error Correction Model; **ECT**, Error Correction Term.

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Jovanovic, 1990; Bencivenga & Smith, 1993). Lucas (1988), on the other hand, says that the financial sector doesn't contribute much to economic growth. He stresses that academics "misapply" the role of financial institutions in fostering economic expansion.

Pradhan et al. (2014a, 2014b, 2014c) state that the literature of financial development has indicated three different theories connected to this relationship, which can be interpreted as follows in the context of the competing ideas around the finance-growth nexus: First, there is the supply-leading hypothesis, which states that financial institution expansion is the primary driver of economic expansion. They explain that finance may boost GDP growth in two ways: I, by improving the efficiency of capital accumulation, which boosts the marginal productivity of capital, and II, by boosting savings, which encourages investment. Therefore, the measures of financial development should lead to economic expansion (King and Levine, 1993; Levien et al., 2000). Second, under the demand-following hypothesis, which posits that economic expansion drives financial growth rather than the other way around, the size of financial arrangements and settlements offered by the financial sector rises in tandem with the scale of real economic operations as a result of the industry's maturation. To those who hold this view, the contribution of the financial industry to fostering economic growth is negligible at best (Robinson, 1952; Pradhan et al., 2014a). Third, "the feedback hypothesis," which states that increased economic growth stimulates the expansion of financial institutions. This means that progress in the financial sector can support and encourage expansion in the economy. Accordingly, Pradhan et al. (2014b) argue for a causal relationship between financial development and economic growth that works in both directions. As a result, there will be no apparent link between monetary policy and economic growth (Lucas, 1988; Chandavarkar, 1992).

For emerging market economies, this relationship is even more important as financial development can play a crucial role in promoting economic growth and development. Jordan, as an emerging market economy, faces significant challenges in promoting sustainable economic growth and development. One such challenge is the limited development of its financial sector, which has been identified as a key factor constraining economic growth in the country. Against this backdrop, this study aims to investigate the dynamic connection between financial development and economic growth in Jordan between 1980 and 2020. Also, this study is motivated by the lack of empirical studies that investigated this relationship. By providing empirical evidence on this relationship, this study seeks to inform policymakers and stakeholders in Jordan on the potential benefits of promoting financial sector development as a means of promoting economic growth and development in the country. In addition, the empirical outcomes of the present study are presumed to provide interested parties with informative content that will be useful in decision-making processes and policy designing.

The remaining of the study is organized as follows: The econometric methodology is presented in section 2; the empirical results are reported in section 3 and section 4 delivers the conclusions and policy implications.

Econometric methodology

The following functional model, which translates the relevant theoretical and empirical arguments, is made to look at the link between finance and economic growth:

$$\mathrm{LnGDP}_t = \beta_0 + \beta_1 \mathrm{LnPC}_t + \beta_2 \mathrm{LnMS}_t + \beta_3 \mathrm{LnBD}_t + \beta_4 \mathrm{LnLL}_t + \beta_5 \mathrm{LnR}_t + \varepsilon_t \quad (1)$$

GDP per capita growth rate is a widely-used economic growth statistic; PC, MS, BD, and LL are prominent metrics of financial development. Private credit (PC) is the ratio of private credit provided to the private sector by the financial system to GDP; Money supply (MS) is the ratio of broad money to GDP; bank deposits (BD) are the ratio of total bank deposits to GDP; liquid liabilities (LL) are the share of liquid liabilities of the financial sector to GDP; and the real interest rate (R). An indicator of the long-term growth rate is the natural logarithm, or Ln, of all variables. The raw data cover the years 1980–2020 and are from the Word Bank Data Bank Database (2022).

To investigates the long-term level relationship between dependent variable (*LnGDP*) and explanatory variables (PC, *MS*, *BD, LL, R*), the bounds test within ARDL framework is used as presented by the following model:

$$\begin{aligned}\Delta Ln\,GDP_t =& \phi_0 + \theta_1 Ln\,GDP_{t-1} + \theta_2 PC_{t-1} + \theta_3 MS_{t-1} + \theta_4 Ln\,BD_{t-1} + \theta_5 Ln\,LL_{t-1} + \theta_6 Ln\,R_{t-1} \sum_{i=1}^{p} \pi_i \Delta Ln\,GDP_{t-i} \\ &+ \sum_{i=0}^{q} \pi_i \Delta PC_{t-i} + \sum_{i=0}^{q} \pi_i \Delta MS_{t-i} + \sum_{i=0}^{q} \pi_i \Delta Ln\,BD_{t-i} + \sum_{i=0}^{q} \pi_i \Delta Ln\,LL_{t-i} + \sum_{i=0}^{q} \pi_i \Delta Ln\,R_{t-i} + e_t\end{aligned} \quad (2)$$

where, Δ is the first difference operator, ϕ_0 is the constant term, θ_1, θ_2, θ_3, θ_4, θ_5 and θ_6 are the coefficients of one period lagged regressors at their levels, and e_t is the random error term with a zero mean and a finite covariance matrix. The next step in this methodology is to estimate the error correction model (ECM) to find the short-term coefficients and the error correction term (ECT).

To determine whether any of the pairs of variables reported in Equation (2) had long-term associations, Pesaran, et, al. (2001) used the limits test within the ARDL technique. In actuality, there are more justifications for using this methodology than other prevalent methods in the literature. The ARDL framework can be used regardless of the integration order of the regressors, which can be integrated at their levels I (0), integrated at their first differences I(1), or mutually co-integrated. It does not require any pretesting processes. Also, this approach does not suffer from the Engle-Granger method's simultaneous equations bias or its inability to do long-term relationship hypothesis testing. Also, all of the ARDL model's variables are taken into account to be endogenous, which helps to resolve the endogeneity problem. This methodology works with smaller sample sizes than the Johansen and Engle-Granger approaches. Also, the information criteria are used to choose the ideal lag time based on a general to specific approach that is recorded by the data generation process (Pesaran, Shin, & Smith 2001; Tang and Nair 2002; Jalil, Feridun, and Ma 2010; Awad and Youssof 2016). In this investigation, the limits test inside the ARDL technique is the appropriate methodology due to the mixed order of integration of the underlying variables and the small sample size of 41 observations.

Empirical results

The empirical results are reported within four subsections containing: unit root testing, bounds testing, long-term relationship, and short-

Table 1
The ADF test statistics for unit root testing.

	Test statistics (Levels)			Test statistics (First Differences)			
Variable	τ_T	τ_μ	τ	τ_T	τ_μ	τ	Integration Order
LnGDP	−2.516	−1.851	0.110	−2.785	−4.022***	−4.078***	I (1)
LnPC	−3.297*	−1.666	1.122	−5.553***	−5.485***	−5.246***	I (1)
LnMS	−2.510	−2.539	−0.195	−3.198	−3.251**	−3.307***	I (1)
LnBD	−1.859	−2.228	1.640	−6.092***	−5.880***	−5.393***	I (1)
LnLL	−1.611	−1.330	0.051	−3.698**	−3.754***	−3.805***	I (1)
LnR	−3.698**	−3.754***	−3.805***	−4.661***	−4.230***	−3.587***	I (0)

term relationship, as follows:

Unit root testing

Table 1 presents the test statistics of the Augmented Dickey-Fuller (ADF) unit root test for (*LnGDP*) as a dependent variable and the explanatory variables (*LnPC*, *LnMS*, *LnBD*, *LnLL*, *LnR*). The statistic values indicate that the dependent variable of the economic growth indicator (*LnGDP*) is not stationary at the level but it becomes stationary at the first difference. Regarding the explanatory variables, the statistic values of the ADF test affirm that all the financial development indicators (*LnPC*, *LnMS*, *LnBD*, *LnLL*) are not stationary at the level but all become stationary at the first difference. Concerning the control variable of the real deposit interest rate (*LnR*), the ADF outcomes indicate this variable to be stationary at the level. As a result, the empirical findings of ADF unit root test provide evidence of a mixed order of integration; the dependent variable of *LnGDP* is a first-order stationary series, whereas the explanatory variables are mixed-order stationary series. Therefore, this can be considered as appropriate validation to investigate the existence of a long-run level relationship using the ARDL bounds testing framework.

Bounds testing

Table 2 displays the F-statistics obtained using the limits testing strategy. As shown by the empirical results, the null hypothesis of no level long-term association between the variables is rejected across the board when using the limits test (Fiii, Fiv, and Fv). That is to say, the estimated F-statistics of the limits test are larger than the critical values for the upper bounds. The existence of a long-term, level link between the variables is therefore accepted as the alternate hypothesis of the study.

Level Long-Term relationship

Table 3 reports the long-term estimated coefficients of the ARDL model. The estimated coefficient of the private credit (LnPC) is 28.47 percent, with a t-statistic value of 3.811 and a corresponding P-value of 0.0005 which is less than a significance level of 0.01. This result indicates that the private credit provided by the financial system has a significant role in accelerating the economic growth of the sampled economy. Economically, private credit facilitated by the financial system is considered the main source of financing different economic activities and sectors, especially in a bank-based financial system as in the case of Jordan. This result is compatible with the empirical findings of King & Levine (1993), Rousseau & Watchel (1998),Kar & Pentecost (2000), and Levine (2005). Regarding the ratio of broad money supply (LnMS), the estimated coefficient was 15.34 percent, which is positive and statistically significant at a significance level of 0.05 as the t-statistic value was 2.267 with a corresponding P-value of 0.0307. This, in turn, affirms the positive role of financial development in enhancing economic growth. For the third measure of financial development (LnBD), the estimated coefficient value was 11.87 percent, with a t-statistic value of 2.455 and a corresponding P-value of 0.0198 to be significant at the significance level of 0.05.

Table 3
The estimated coefficients of the long-term ARDL model.

Variable	Coefficient	t-Statistic	P-value
Ln PC	0.2847***	3.811	0.0005
Ln MS	0.1534**	2.267	0.0307
Ln BD	0.1187**	2.455	0.0198
Ln LL	0.1337**	2.569	0.0171
Ln R	−0.0974**	−2.312	0.0289
C	0.5800***	3.792	0.0006

This result is in the same direction as the previous results, which asserts the encouraging role of financial development in improving the economic growth of Jordan. Concerning the liquid liabilities ratio (LnLL), the empirical results reveal that the estimated coefficient value was 13.37 percent, with a t-statistic value of 2.569 and a corresponding P-value of 0.0171, which is significant at the significance level of 0.05. Also, this result supports the significant role of financial development in improving economic growth processes. Finally, the estimated coefficient of real interest rate (LnR) is shown to be in the opposite direction with a negative value of (-9.74) percent and an absolute t-statistic value of | 3.792| percent and a corresponding P-value of 0.0006, which is significant at the significance level of 0.000. This result indicates the inverse

Table 2
Bounds F- and t-statistics for the Existence of a Levels Relationship.

		Without Deterministic Trends		
p	***F_{iii}***	***P-vauel_F_{iii}****	***t_{iii}***	***P-vauel_t_{iii}****
1	5.2625***	0.0089	−4.9052***	0.0000
2	2.7634**	0.0795	−2.8833**	0.0803
3	4.0390**	0.0379	−2.9131**	0.0930

	With Deterministic Trends					
p	***F_{iv}***	***P-vauel_F_{iv}****	***F_v***	***P-vauel_F_v****	***t_v***	***P-vauel_t_v****
1	5.4195***	0.0012	6.79590***	0.0094	−4.9504***	0.0000
2	2.2970**	0.0367	3.8556**	0.0392	−3.6231***	0.0094
3	3.8682**	0.0650	3.7402**	0.0833	−3.3577***	0.0072

Table 4
The Error Correction Estimations of the short-term relationship.

Variable	Coefficient	t-Statistic	P-value
Δ Ln PC_t	0.2418***	3.7961	0.0000
Δ Ln PC_{t-1}	0.1249	0.3864	0.3253
Δ Ln MS_t	0.1965**	2.7231	0.0190
Δ Ln BD_t	0.1109***	2.9891	0.0057
Δ Ln LL_t	0.0986**	3.7642	0.0004
Δ Ln R_t	−0.1361**	−2.0492	0.0361
Δ Ln R_{t-1}	−0.1391*	−1.9494	0.0797
C	−0.1840	−0.6820	0.3421
ε_{t-1} (*ECT*)	−0.7562***	−3.9471	0.0000

relationship between real interest rates and economic growth; an increasing interest rate has a damaging impact on economic growth. These results are aligned with the empirical arguments of previous studies (such as Abusharbeh, 2017; Almahadin, 2019; Almahadin and Tuna, 2019).

Short-Term relationship

The empirical outcomes of the error-correction model (ECM) presenting the short-term relationship are reported in Table 4. As clearly shown, the majority of the estimated coefficients of financial development indicators are found to be positive and statistically significant. The results of ECM affirm the existence of a positive short-term relationship between financial development and economic growth in Jordan. The empirical findings of this model are strongly consistent with the findings of previous studies (such as Ghali, 1999; Abdelhafidh, 2013; Almahadin, 2022; Almahadin, Al-Gasaymeh, Alrawashdeh, & Abu Siam, 2020). In the opposite direction, the estimated coefficients of real interest rate appear to be negative and statistically significant; providing evidence of a negative short-term relationship between financial development and economic growth.

Regarding the ECT (εt-1), the estimated coefficient was negative with an absolute value of |0.7562| and a P-value of 0.000. The estimated value of the ECT indicates the long-term convergence process between financial development and economic growth. The estimated value of the ECT reveals that the convergence of the economic growth process will reach the long-term equilibrium path with a speed of adjustment of approximately 76 percent through the channels of financial development.

Finally, the diagnostic tests of the estimated ECM show that the coefficient of determination (*R-square*) is around 70 percent, and *the F-statistic* value is 11.13 with a *P-value* of 0.000 to be highly significant, thus confirming the fitness of the estimated model. In the same direction, the Durbin Watson statistic is 2.14, which is close to the value of 2 as a rule of thumb, indicating that the estimated model is not affected by the possible autocorrelation problem.

The conclusion and policy implications

The purpose of this research is to investigate the dynamic finance-growth connection by using Jordan's economy as a case study. To do this, we compile a collection of financial development indicators covering the expansive time span of 1980–2020 using the bounds testing framework of autoregressive distributed lag (ARDL). The empirical evidence demonstrates the importance of Jordan's progress in the financial sector to the country's overall economic expansion. The ARDL and ECM models both support the existence of a dynamic finance-growth link. In addition, the calculated ECT suggests that the economic growth process will converge on the long-term equilibrium route via financial development channels at a rather fast rate of adjustment. However, empirical evidence from both the long and short terms demonstrate a negative correlation between real interest rates and economic expansion. The results of this study are in alignment with the supply-leading hypothesis, which holds that financial development is a significant participant in economic growth processes. The findings have important policy implications since they indicate that the financial systems of emerging market nations are vulnerable to changes in interest rate policy. Therefore, the results have substantial consequences for policymakers who want to maintain financial development and promote economic growth in emerging markets.

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CRediT authorship contribution statement

Yazan Oroud: Conceptualization, Methodology, Software, Writing – original draft, Writing – review & editing. **Hamed Ahmad Almahadin:** Conceptualization, Methodology, Validation, Writing – review & editing. **Mansour Alkhazaleh:** Resources, Writing – review & editing. **Belal Shneikat:** Data curation, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

Abdelhafidh, S. (2013). Potential financing sources of investment and economic growth in North African countries: A causality analysis. *Journal of Policy Modeling, 35*(1), 150–169.
Almahadin, H. A. (2022). Spillover effects of US monetary policy on banking development: evidence from the Asian region. *Global Business Review, 23*(1), 7–19.
Almahadin, H. A., Al-Gasaymeh, A., Alrawashdeh, N., & Abu Siam, Y. (2020). The Effect of Banking Industry Development on Economic Growth: An Empirical Study in Jordan. *Journal of Asian Finance, Economics and Business, 8*(5), 325–334.
Almahadin, H. A., & Tuna, G. (2019). Dynamic impact of interest rate volatility and spillover effect of the US interest rate on banking sector development of Turkey: empirical evidence from cointegration and causality analysis. *Asia-Pacific Journal of Accounting & Economics, 26*(5), 577–588.
Awad, I., & Youssof, A. (2016). The relationship between economic growth, energy consumption and CO2 emissions: Evidence from three countries in the Middle East. *Renewable and Sustainable Energy Reviews, 63*, 10–18.
Bagehot, W. (1873). *Lombard Street*, Homewood, IL: Richard D. Irwin, [1873] 1962 Edition.
Bencivenga, V. R., & Smith, B. D. (1993). Some consequences of credit rationing in an endogenous growth model. *Journal of Economic Dynamics and Control, 17*(1–2), 97–122.
Blackburn, K., & Hung, V. T. Y. (1998). A theory of growth, financial development, and trade. *Economica, 65*, 107–124.
Chandavarkar, A. (1992). Of Finance and Development: Neglected and Unsettled Questions. *World Development, 27*, 1069–1082.
Coricelli, F., & Roland, I. (2008). Finance and Growth: When Does Credit Really Matter? *CEPR Discussion Paper* No. DP6885. June, 2008.

Ghali, K. H. (1999). Financial development and economic growth: The Tunisian experience. *Review of Development Economics, 3*(3), 310–322.
Greenwood, J., & Jovanovic, B. (1990). Financial development, growth, and the distribution of income. *Journal of Political Economy, 98*, 1076–1107.
Hicks, J. (1969). *A Theory of Economic History*. Oxford: Clarendon Press.
Jalil, A., Feridun, M., & Ma, Y. (2010). Finance-growth nexus in China revisited: New evidence from principal components and ARDL bounds tests. *International Journal of Applied Econometrics and Quantitative Studies, 7*(1), 15–28.
King, R. G., & Levine, R. (1993). Finance and Growth: Schumpeter Might Be Right. *Quarterly Journal of Economics, 108*(3), 717–737.
Levien, R., Loayza, N., & Beck, T. (2000). Financial Intermediation and Growth: Causality and Causes. *Journal of Monetary Economics, 46*(1), 31–77.
Levine, R. (1997). Financial Development and Economic Growth: Views and Agenda. *Journal of Economic literature, 35*(2), 688–726.
Levine, R. (2005). Finance and Growth: Theory and Evidence. In P. Aghion, & S. Durlauf (Eds.), *Handbook of Economic Growth* (Vol (1), Part A, pp. 865–934). Elsevier:
Lucas, R. E. (1988). On the Mechanics of Economic Development. *Journal of Monetary Economics, 22*, 3–42.
Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds Testing Approaches to the Analysis of Level Relationships. *Journal of Applied Econometrics, 16*(3), 289–326.
Pradhan, R. P., Arvin, B. M., Norman, N. R., & Nishigaki, Y. (2014). Does Banking Sector Development Affect Economic Growth and Inflation? A Panel Cointegration and Causality Approach. *Applied Financial Economics, 24*(7), 465–480.
Pradhan, R. P., Arvin, M. B., Hall, J. H., & Bahmani, S. (2014). Causal Nexus between Economic Growth, Banking Sector Development, Stock Market Development, and other Macroeconomic Variables: The Case of ASEAN Countries. *Review of Financial Economics, 23*(4), 155–173.
Pradhan, R. P., Tripathy, S., Chatterjee, D., Zaki, D. B., & Mukhopadhyay, B. (2014). Development of Banking Sector and Economic Growth: The ARF Experience. *Decision, 41*(3), 245–259.
Robinson, J. (1952). *The Rate of Interest and Other Essays*. MacMillan, London: Chapter the generalization of the general theory.
Schumpeter, J.A. (1912). Theorie der wirtschaftlichen Entwicklung. Dunker & Humblot, Leipzig. The Theory of Economic Development translated by R. Opie. Harvard University Press, Cambridge, MA, 1934.
Rousseau, P. L., & Wachtel, P. (1998). Financial intermediation and economic performance: historical evidence from five industrialized countries. *Journal of money, credit and, banking,*, 657–678.
Tang, C. F., & Nair, M. (2002). The effects of exchange rate fluctuations on trade balance in Malaysia. *International Journal of Applied Econometrics and Quantitative Studies, 1*(1), 1–20.
Kar, M., & Pentecost, E. J. (2000). *Financial development and economic growth in Turkey: further evidence on the causality issue*. Universitäts-und Landesbibliothek Sachsen-Anhalt.