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Revisiting the Finance-Growth Nexus in Developing Countries: Spatial Evidence on the Governance Spillovers

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ABSTRACT

While prior research has widely examined how financial development (FD) influences economic growth, the role of cross-country spatial interdependence in this regard remains underexplored. This study contributes to bridge this gap by employing a spatial econometric technique to analyse 56 developing economies from 1990-2019. Key results indicate that while FD stimulates growth, there is no conclusive evidence of its threshold effect. Governance factors are crucial in the nexus of FD-growth, with political governance demonstrating robust direct and spillover effects on growth. Economic governance, on the other hand, appears to moderate the growth-effect of FD. Overall, these findings underscore the importance of spatial interdependence and governance quality in the FD-growth nexus. The study implies the need for coordinated policy-making that strengthens financial systems alongside governance reforms, particularly political stability and regulatory frameworks, to maximise growth. By integrating spatial spillovers and governance dynamics into policy design, developing economies can better harness financial development for sustainable and inclusive economic progress.

Keywords: Economic growth, financial development, governance quality, spatial Durbin model, spillover effect

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INTRODUCTION

The relationship between financial development (FD) and economic growth is widely studied, with a general consensus on its positive link (Dawson, 2010; Demetriades & Rousseau, 2016). Governance plays a key role in enhancing the FD's growth effects, with strong legal protections, economic freedom, and corruption control supporting

FD (Law et al., 2013). However, excessive FD in weak institutional contexts can hinder growth, as seen in the "finance curse" phenomenon. Law et al. (2018) found an inverted U-shaped relationship, where excessive finance stifles growth in poorly governed systems. Effective governance mitigates financial corruption and ensures productive resource use, enhancing the FD's positive impact on growth. Post-2008 crisis studies argue that without strong governance, excessive finance can limit growth (Cecchetti & Kharroubi, 2012; Law & Singh, 2014).

While early research showed a positive correlation, recent studies focus on causality and institutional mechanisms, revealing bidirectional links, especially through the banking sector. However, empirical findings are inconclusive due to methodological and contextual differences (Bijlsma et al., 2018; Qasemi, 2019). Globalisation has complicated this relationship by increasing interdependence, emphasising the need to consider spatial spillovers, an area this study aims to explore.

Recent spatial econometric studies, primarily focussing on China and the Asia-Pacific region, have examined the FD's impacts on the economic and environmental outcomes (Wang et al, 2019; Zhong & Li, 2020). Some studies, employing spatial autoregressive and spatial Durbin models, reveal that the FD enhances growth and inclusiveness but may also impose environmental pressures without improved governance (Al-Barakani et al., 2022; Ran et al., 2020; Samreen & Majeed, 2020). However, studies on multi-country spatial spillovers of governance in the finance-growth nexus are apparently limited (Ahmad & Law, 2023).

This study, using the spatial Durbin model (SDM) examines the role of spatial spillovers in the FD, governance, and growth nexus across 56 developing countries from 1990 to 2019 and it addresses two key questions: (1) does the FD in one country cause spillovers into neighbouring countries? And (2) does governance still matter in the FD-growth relationship when spatial effects are considered? The study focusses on emerging and developing countries to minimise sample heterogeneity and employs geographical matrices to objectively interpret spatial dependence.

The study contributes to the literature by: (1) demonstrating the FD's spillover effects on neighbouring countries' growth; (2) reinforcing the significance of governance quality in growth; and (3) examining the governance's moderating role in the FD-growth link. Findings confirm the FD's positive impact on growth, with political governance (PG) being the most influential driver, while the economic governance (EG) moderates the FD's growth effects. These insights offer valuable policy implications for emerging economies.

MATERIALS AND METHODS

The following is a growth model with right-hand-side regressors comprising the FD, governance, and other control variables:

$$GROWTH_{it} = \alpha_i + \beta_1 FD_{it} + \beta_2 FD_{it}^2 + \beta_3 EG_{it} + \beta_4 PG_{it} + \beta_5 (EG * FD)_{it} + \beta_6 (PG * FD)_{it} + X'\beta + \varepsilon_{it} \quad [1]$$

where GROWTH is the average growth rates of real GDP per capita in country, FD and FD^2 are financial development index and its squared term, EG and PG are economic and political governance terms, respectively. X is a vector of growth determinants such as initial real GDP per capita, investment, and population growth. α is the unobserved country-specific effects, and ε is the i.i.d. disturbance term.

Expanding the above equation into a SDM gives the following:

$$\begin{aligned} GROWTH_{it} = {} & \alpha_i + \beta_1 FD_{it} + \beta_2 FD_{it}^2 + \beta_3 EG_{it} + \beta_4 PG_{it} + \beta_5 (EG * FD)_{it} \\ & + \beta_6 (PG * FD)_{it} + X'\beta + \rho W(GROWTH)_{it} + \theta_1 W(FD)_{it} \\ & + \theta_2 W(FD^2)_{it} + \theta_3 W(EG)_{it} + \theta_4 W(PG)_{it} + \theta_5 W(EG * FD)_{it} \\ & + \theta_6 W(PG * FD)_{it} + W(X')\theta + v_{it} \end{aligned} \quad [2]$$

where the spatial weight matrix, *W*, captures spatial dependence between countries using binary contiguity at the first order. Here, countries are neighbors if they share borders, with w_{ij} = 1 for contiguous countries and 0 otherwise. This contiguity matrix is strictly exogenous, avoiding identification issues (Anselin & Bera, 1998; Manski, 1993). Following spatial econometric conventions, the matrix is row-standardised.

The 56 developing countries were selected based on having at least one neighbour for spatial matrix construction and no missing data. Variables, collected annually, are converted into 5-year averages, resulting in six non-overlapping periods and 336 observations. Governance quality is proxied by Law and Order (EG) from the ICRG dataset (The PRS Group, 2017) and Polity 2 (PG) from the Polity V dataset (Marshall & Gurr, 2020). Financial Development (FD) is measured using the IMF's Financial Development Index (International Monetary Fund, 2019), while real GDP per capita growth, investment, and population growth are sourced from the World Development Indicators (World Bank Group, 2020).

RESULTS AND DISCUSSION

As seen in Equation 2, SDM estimation captures the within-country effects (β coefficients) and the spillover effects from neighboring countries (θ coefficients). The results in Table 1 show the FD's significant positive impact on growth at the 5% level, but the negative FD^2 coefficient, suggesting an inverse U-shaped relationship, is statistically insignificant, indicating no threshold effect. The PG, measured by Polity 2, significantly drives growth, while the EG, measured by Law and Order, is insignificant. However, the negative

significant interaction term FD*EG reveals that the FD's growth effect diminishes as the EG improves, suggesting policymakers should consider the EG levels in financial development strategies. The results also confirm conditional convergence, with investment and population growth significantly influencing growth dynamics.

Meanhwile, the spillover effects, captured by ρ (spatially lagged growth) show positive growth spillovers (significant at 1%). Significant θ coefficients (for spatially lagged

Table 1
Estimation results

Estimation model	Spatial Durbin Model (SDM)	
	Within-country effect^	Spillover effect^
FD	16.251**	-3.279
	(7.676)	(9.093)
FD^2	-7.643	18.610**
	(7.326)	(8.807)
EG (Law and Order)	0.518	0.844*
	(0.330)	(0.453)
PG (Polity 2)	0.143**	0.040
	(0.060)	(0.071)
FD*EG	-2.374**	-2.179
	(1.151)	(1.417)
FD*PG	-0.080	-0.196
	(0.206)	(0.251)
Initial real GDP per capita	-4.583***	1.923**
	(0.701)	(0.767)
Investment	0.163***	0.001
	(0.026)	(0.035)
Population growth	-0.437**	-0.464
	(0.214)	(0.343)
ρ		0.135***
		(0.051)
Country-fixed effects	Yes	
Time-fixed effects	Yes	
Number of countries	56	
Number of observations	336	
R-squared (adjusted)	0.124	
Residual variance	2.669***	
LLF	-643.211	
AIC	1326.423	

^In SDM estimation, within-country effect is given by the β coefficients, and spillover effect is by the θ coefficients (i.e., the neighbors' effect) – see Equation (2)
Note. The dependent variable is Real GDP per capita growth rate. Standard errors in parentheses. ***, ** and * indicate a significant level at 1%, 5% and 10% respectively

explanatory variables) for neighbours' FD^2 and EG indicate positive externalities, with FD^2 suggesting a U-shaped threshold effect and potential club convergence in financial development. Spatially lagged initial GDP per capita also supports growth convergence clubs, though the positive coefficient may imply divergent long-term paths (Ahmad & Hall, 2017; Arbia et al., 2010).

CONCLUSION

This study, using the spatial Durbin analysis on a 30-year panel of 56 emerging countries, confirms the financial development's (FD) significant positive impact on growth but finds no evidence of an inverted U-shaped threshold effect. Governance, especially the Political Governance, is critical for driving growth domestically and through spillovers, while the Economic Governance moderates the FD's growth effects. These findings underscore the importance of balancing the FD promotion with strong institutional frameworks, emphasising transparency, accountability, and the rule of law. Regional cooperation is also vital to harness cross-border spillovers and ensure policy stability.

In conclusion, the study highlights the nuanced interplay between the FD, governance, and growth, offering policymakers insights to design targeted, balanced strategies for sustained and inclusive economic development in emerging economies.

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REFERENCES

Ahmad, M., & Hall, S. G. (2017). Economic growth and convergence: Do institutional proximity and spillovers matter? *Journal of Policy Modeling, 39*(6), 1065-1085. https://doi.org/10.1016/j.jpolmod.2017.07.001

Ahmad, M., & Law, S. H. (2023). Financial development, institutions, and economic growth nexus: A spatial econometrics analysis using geographical and institutional proximities. *International Journal of Finance & Economics*, *29*(3), 2699-2721. https://doi.org/10.1002/ijfe.2791

Al-Barakani, A., Bin, L., Zhang, X., Saeed, M., Qahtan, A. S. A., & Ghallab, H. M. H. (2022). Spatial analysis of financial development's effect on the ecological footprint of belt and road initiative countries: Mitigation options through renewable energy consumption and institutional quality. *Journal of Cleaner Production, 366*, Article 132696. https://doi.org/10.1016/j.jclepro.2022.132696

Anselin, L., & Bera, A. (1998). Spatial dependence in linear regression models with an introduction to spatial econometrics. In A. Ullah & D. E. A. Giles (Eds.) *Handbook of applied economic statistics* (pp. 237-290). Mercel Dekker.

Arbia, G., Battisti, M., and Di Vaio, G. (2010). Institutions and geography: Empirical test of spatial growth models for European regions. *Economic Modelling, 27*(1), 12-21. http://doi.org/10.1016/j.econmod.2009.07.004

Bijlsma, M., Kool, C., & 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

Cecchetti, G., & Kharroubi, E. (2012). *Reassessing the impact of finance on growth* (Papers No. 381). Bank for International Settlements.

Dawson, P. J. (2010). Financial development and economic growth: A panel approach. *Applied Economics Letters, 17*(8), 741-745. https://doi.org/10.1080/13504850802314411

Demetriades, P. O., & Rousseau, P. L. (2016). The changing face of financial development. *Economics Letters, 141*, 87-90. https://doi.org/10.1016/j.econlet.2016.02.009

International Monetary Fund. (2019). *Financial development index*. International Monetary Fund. https://data.imf.org/?sk=f8032e80-b36c-43b1-ac26-493c5b1cd33b

Law, S. H., & Singh, N. (2014). Does too much finance harm economic growth? *Journal of Banking & Finance*, *41*, 36-44. https://doi.org/10.1016/j.jbankfin.2013.12.020

Law, S. H., Azman-Saini, W. N. W., & Ibrahim, M. H. (2013). Institutional quality thresholds and the finance–growth nexus. *Journal of Banking and Finance, 37*(12), 5373-5381. https://doi.org/10.1016/j.jbankfin.2013.03.011

Law, S. H., Kutan, A. M., & Naseem, N. A. M. (2018). The role of institutions in finance curse: Evidence from international data. *Journal of Comparative Economics, 46*(1), 174-191. https://doi.org/10.1016/j.jce.2017.04.001

Manski, C. F. (1993). Identification of endogenous social effects: The reflection problem. *The Review of Economic Studies*, *60*(3), 531-542. https://doi.org/10.2307/2298123

Marshall, M. G., & Gurr, T. R. (2020). *Polity V project: Political regime characteristics and transitions, 1800-2018.* Center for Systemic Peace. http://www.systemicpeace.org/inscrdata.html

Qasemi, M. (2019). *Meta-analysis of the empirical relationship between financial development and economic growth* [Doctoral dissertation, Seoul National University]. Seoul National University Graduate School. https://s-space.snu.ac.kr/handle/10371/161135

Ran, M., Chen, L., & Li, W. (2020). Financial deepening, spatial spillover, and urban–rural income disparity: Evidence from China. *Sustainability, 12*(4), Article 1450. https://doi.org/10.3390/su12041450

Samreen, I., & Majeed, M. T. (2020). Spatial econometric model of the spillover effects of financial development on carbon emissions: A global analysis. *Pakistan Journal of Commerce and Social Sciences, 14*(2), 569-602.

The PRS Group. (2017). *International country risk guide dataset*. The PRS Group. https://datafinder.qog.gu.se/dataset/icrg

Wang, C., Zhang, X., Ghadimi, P., Liu, Q., Lim, M. K., & Stanley, H. E. (2019). The impact of regional financial development on economic growth in Beijing–Tianjin–Hebei region: A spatial econometric

analysis. *Physica A: Statistical Mechanics and its Applications, 521*, 635-648. https://doi.org/10.1016/j.physa.2019.01.103

World Bank Group. (2020). *World development indicators*. World Bank Group. https://databank.worldbank.org/source/world-development-indicators

Zhong, J., & Li, T. (2020). Impact of financial development and its spatial spillover effect on green total factor productivity: Evidence from 30 provinces in China. *Mathematical Problems in Engineering*, *2020*(1), Article 5741387. https://doi.org/10.1155/2020/5741387