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EMPIRICAL DATA FOR EUROPEAN TRANSITION COUNTRIES ON THE LINK BETWEEN FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH

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Abstract:
This study uses market capitalization and the banking industry to examine the relationship between financial development and economic growth between 2000 and 2022. This research employs multiple approaches, including OLS, fixed and random effects, and Hausman-Taylor with instrumental variables. Our study provided well-specified results, demonstrating that financial development is statistically significant and positively affects real GDP per capita in European transition countries. Consequently, financial development has positive effects on real GDP per capita as well as being necessary to promote economic growth. According to the analysis, real GDP per capita growth is negatively impacted by both the financial crisis and total liabilities. These findings suggest that when these countries face financial turmoil, it impedes their ability to sustain economic expansion; likewise, higher levels of liquid liabilities are associated with a reduction in real GDP per capita. As a result, our methodology in European transition nations sheds new light on the link between financial development, financial crises, and real GDP per capita growth and provides significant insights for policymakers seeking a deeper understanding. The study is unique in that it aims to shed light on how financial development affects the growth of real GDP per capita in transitional European nations. Central banks and policymakers will find value in the study's conclusions.

JEL: C23, G28, O16

Keywords: financial development, panel data, economic growth

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1. Introduction

Several studies have investigated the link between financial development and growth. To look into how financial development and economic growth are related, we endeavor to address the study question:

1) Does financial development boost economic growth in European transition countries?
2) Does the financial crisis have a negative impact on real GDP per capita growth?

Results also show that the increase in real GDP per capita is negatively impacted by government spending and total liabilities. To address the research topic, this study utilizes a range of approaches, including pooled OLS, a fixed, random effects model, and the Hausman-Taylor model with IV. The International Monetary Fund (IMF), the European Bank, and the World Bank provided the data for this study. The study makes two contributions: first, it examines the link between financial development, financial crises, and economic growth; second, it looks at the effects of inflation and total liabilities on growth.

The other sections of the study are arranged as follows: Section 2 reviews relevant literature; Section 3 presents the research methodology and data; Section 4 presents the findings and discussion; and Section 5 concludes.

2. Review of literature

The relationship between growth and financial development has been the focus of many research studies. A close correlation was found between growth and the degree of financial development by Mohsin Khan and Abdelhak S. Senhadji (2000). According to Ross Levine (2013), there is a strong, positive correlation between financial development and economic growth based on both theoretical logic and actual data. According to Ha Minh Nguyen's (2022) research, there is a positive correlation between financial development and economic growth. Besnik Taip Fetai (2018) provided evidence in favour of the theory that finance drives economic growth by demonstrating a positive correlation between financial development indicators and real GDP per capita growth. According to César Calderón & Lin Liu (2003), economic expansion is typically accompanied by financial development. According to Dmitry Osinski's (2000) correlation analysis, financial development and economic growth are strongly positively correlated. According to the first analysis by Rioja F. and Valev, N. (2004), financial development has a small but favourable effect on economic growth. Second, in countries with less developed financial systems, there is a negative association between financial development and economic growth.

Jordan Z. Shan, Alan G. Morris, Fiona Sun (2003 concluded that there is evidence of a bidirectional correlation between financial development and growth in half of the nations, as well as reverse causality in three others. There is insufficient evidence to support the concept that finance "leads" growth. Hence, generalizations regarding this

connection should be avoided. Dawson (2008) found that financial development does not have a beneficial influence on economic growth but rather follows economic growth. Cojocaru *et al.* (2011) demonstrated that financial development positively affected economic growth in transition countries. Yousif Khalifa Al-Yousif (2002) discovered a bidirectional causal relationship between financial development and economic growth. This indicates that since economic policies are nation-specific and their success rests, among other things, on the effectiveness of the institutions executing them, the link between financial development and economic growth cannot be generalized across nations.

Christopoulos, D.K. and Tsionas, E.G. (2004) affirmed that there is just one equilibrium relationship between financial depth, growth, and ancillary variables, and the only relationship that implies unidirectional causation between financial depth and growth is the cointegrating link. Renfang Tian, Jingjing Xu, Hui Feng, Adian McFarlane (2024) uncover the link between financial development and economic growth to have structural discontinuities with different degrees of statistical significance.

Philip Arestis, Georgios Chortareas, Georgios Magkonis (2014) conducted a meta-analysis of 69 published publications on the relationship between finance and growth was carried out. Their findings show that papers using market-based proxies of financial development (such as stock market capitalization) have a lower correlation with economic growth than those using bank-based measures. Similarly, Mehmood et al. (2015) and Patrick (1966) investigated the data supporting a reciprocal relationship between financial development and economic expansion. According to Arestis and Demetriades (2001), the stock market did not have a significant impact on growth, suggesting that the banking industry is the one with the most weight and significance. According to Beck, Levine, and Loayza (2000), financial intermediaries have a significant positive impact on the improvement of total factor productivity, which in turn influences GDP growth overall. However, it is unclear whether there are long-term links between the growth of financial intermediaries and the growth of private savings rates as well as the expansion of physical capital. Furthermore, financial development and other internally determined elements do not primarily guide economic evolution, according to the study. Jeremy Greenwood, Bruce D. Smith (1997) investigated the role that markets play in fostering economic activity specialization. Koivu, T. (2002) looked at 25 transition economies over the years 1993–2000 using panel data. The amount of bank credit extended to the private sector, which shows the significance of multiple banking crises, internal cash flows, and foreign direct investment for funding investment, all point to the conclusion that domestic bank credit has had only a minimal impact on promoting economic growth. In addition, the quantitative banking sector has not contributed to economic development.

Of the two models—random and fixed effects—the Hausman Taylor IVs model is considered more appropriate. Below is the Hausman-Taylor empirical model specification:

$$Yit = c + \beta 1(Yit - 1) + B2\ (FDit) + \beta 3(INFit) + \beta 4(LLBit) + \beta 5(GGCit) + \beta 6(CRISISit) + uit$$

The dependent variable, denoted as Yit, is the growth rate of real GDP per capita. The explanatory variables consist of FDit financial development, which represents government consumption as a percentage of GDP and market capitalization, GGCit government credit to the private sector as a proportion of GDP, INFit inflation, LLBit liquid liabilities as a proportion of GDP, the dummy term CRISISit, and uit, which represent exogenous inconveniences.

We also included inflation and government expenditure as a control variable to make the results more transparent and provide the descriptive statistics below:

Table 1: Summary statistics

Variables	Obs	Mean	Standard	Min	Max
GDP/perc	277	3.505122	3.861284	-15.20848	13.4259
FD-(DC+MC)	117	767.2625	5322.495	8.101744	40954.29
LLB	245	50.29811	18.06364	11.27058	92.04979
GGC	276	17.91744	3.562582	9.692453	29.94059
INF	275	9.625216	17.36445	-1.425314	185.2908
CRISIS	264	.1931818	.3955442	0	1

Source: Author's calculation.

Table 1 provides a basic description of the variables that introduce the control variables and additional control elements that might be relevant during a financial crisis or period of financial progress. The mean, standard deviation, lowest, and highest values are displayed in the table. The sample has around 277 observations.

3. Empirical results

The table below (Table 2) employs various econometric approaches in European countries in transition (North Macedonia, Serbia, Slovenia, Turkey, Albania, Hungary, Russia, Czhekia, Bosnia and Hercegovina, Belarus, Montenegro, Romania, and Poland).

Table 2: The results of the regression analysis

Variables	OLS (gdpcapita)	Fixed effects (gdp_percapita)	Random effects (gdp_percapita)	Hausman-Taylor IV (gdp_percapita)
gdp_perca s.e				0.48439** (0.04330)
FD(mark_cap+dom_credit)/gdp s.e	-.0016003 * (0.0049)	0.0399343 ** (0.0110688)	0.0355636** (0.0104681)	0.0379397 ** (0.0108553)
Total_Liabilities/gdp s.e	-0.0649645 (0.0143)**	-0.1631424** (0.0217341)	-.1426889 ** (0.0207371)	-0.1539348** (.021228)
Financial_Crisis s.e	-3.887601 (0.3307)	-3.44216 (0.3256667)	-3.646332 (0.3167074)	-3.548628 (0.3197931)
Gov_Exp/gdp s.e	0.007282** (0.0179)	-0.449523 (0.1806233)	-.1038231*** (0.099726)	-0.2604608 (0.1408448)
Inflation s.e	0.0834515 (0.0244)**	0.1528556** (0.0239352)	0.1472861 ** (0.0238922)	0.1506795** (0.0238556)
Nr.Obs	277	277	277	277
R-squared	0.2677	0.3347		
F	15.96	14.44		
Chi2			76.73	220.64

Note: The symbols *, **, and *** signify significance at 10%, 5% and 1%, respectively.
Source: Author's calculation

Our research yielded well-defined findings. As Table 2 illustrates, financial development and real GDP per capita growth are positively correlated, as shown by the positive coefficient of 0.03793 (s.e. 0.01085), which is statistically significant. European transition countries undergoing from planned to market-based economies often experience a positive correlation between a well-developed financial sector and economic growth, including Turkey's financial development, which has likely played a role in supporting private sector activities and contributing to economic expansion. Moreover, Poland, the Czech Republic, and Hungary are establishing robust financial systems, including efficient banking, capital markets and institutions, that can support increased investment, entrepreneurship, and overall economic development. The results in Table 2 show that a financial crisis is negative -3.54862, financial crisis often leads to a contraction in economic growth by banking instability and overall economic uncertainty. The results are consistent with studies by Fetai (2018), Masten *et al*. (2011) and others. These findings suggest that when these countries face financial turmoil, it impedes their ability to sustain economic expansion. The results suggest that there is a statistically significant inverse relationship between liquid liabilities and real GDP per capita growth., measuring -0.153934 (s.e. 0.02122); thus, higher levels of liquid liabilities are associated with a reduction in real GDP per capita.

This finding suggests that abundant liquid liabilities may contribute to financial instability, misallocation of resources, and unsustainable credit expansion. This, in turn, may lead to economic downturns and lower productivity growth over time.

Overall, this study's findings highlight the need for policymakers to find a middle ground between encouraging financial stability and deepening.

By effectively managing the growth of liquid liabilities, policymakers can help foster sustainable economic growth and improve the well-being of their citizens in the long run. Inflation has a positive coefficient of 0.1506795 (s.e 0.02385), which is statistically significant, indicating that inflation has a favourable effect on the growth of real GDP per capita. Some studies suggest a non–linear relationship between inflation and real GDP per capita growth. They propose that low to moderate inflation might positively affect growth, but once a certain threshold is crossed, the impact could return negative. This threshold effect implies that a moderate level of inflation may stimulate economic activity, while high inflation might hinder growth. This is consistent with studies by Fetai (2022), which found that a higher inflation rate is related to a poorer economic growth rate when it exceeds the 3.90 per cent barrier. However, a lower inflation rate is connected with a greater economic growth rate when it falls below the 3.90 per cent threshold. Rousseau and Wachtel (2002) demonstrate that financial deepening no longer contributes to economic growth when inflation rises above 15-25%.

4. Conclusion

Using empirical endogenous growth models and advanced econometric approaches, we determined the effect of financial development as a stimulant for economic growth in European nations in transition from 2000 through 2022. Financial indicators, including market capitalization, credit to the private sector, and liquid liabilities, were examined in the study to evaluate the level of financial development. These results signify an economic convergence among the countries, showcasing a shared progression toward a steady state level that surpasses the average, reflecting positive economic trends. The findings support the hypothesis that financial development drives economic growth rather than just pursuing it, as both financial development and inflation positively affect real GDP per capita growth. The results also show that the financial crisis and liabilities negatively impact the real GDP per capita increase. Government consumption harms real GDP per capita growth. Government spending may hurt economic growth, leading to inefficiencies, misallocating resources, or creating fiscal imbalances. Excessive or poorly targeted spending and factors like high taxes or unsustainable public debt can hinder private sector productivity and overall economic performance. The suggested course of action revolves around enhancing institutional frameworks and fostering competitive dynamics within the financial sectors, all geared towards fostering sustained real GDP per capita growth. Finally, financial development is a good predictor of the future real GDP per capita rate in transition European countries. Similarly, financial development is essential to sustaining economic growth, which in turn has a favorable impact on real GDP per capita.

Conflict of interest statement

I certify that I have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus, membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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