

The Effect of Inflation on Finance-Growth Causality in Iran

Nikooghadam, M.¹, Aboutorabi, M.A.^{2*}

Abstract

Dominant economic theory assumes a positive relationship between financial development and economic growth. Contradictorily some empirical evidence shows that the strength of this relation and even its sign heavily depends on economic circumstances of each country. One of the most important determinants of finance-growth nexus is inflation. Specially, in many developing countries which have been experienced higher inflation and poor macroeconomic stability, studying the role of inflation on finance-growth nexus is crucial. This paper tests tri-variate causality among economic growth, financial development and inflation rate in Iran during 1961 to 2016 by using VECM model. Comparing two-variate and tri-variate causality tests reveals that adverse causality from growth to some financial development indicators is caused by high rates of inflation. Moreover, high stable inflation in Iran weakens the causality from some other financial development indicators to economic growth.

Keywords: financial development, financial stability, inflation, economic growth, causality test

JEL Classification: G00, G10, Q30, O40, C22.

1. Introduction

In the past decades, finance-growth debate has grown dramatically. The mainstream literature demonstrates a stable positive long-run growth effect of financial development (For example, King and Levine, 1993 a, b; Levine, 1997, 2002, 2005; Demirguc-Kunt and Maksimovic, 1998; Rajan and Zingales, 1998; Calderon and Liu, 2003; Demetriades and Andrianova, 2004; Honohan, 2004; James, 2008; Ang, 2008; Zhang et al., 2012; Beck et al., 2015; Batuo et al., 2017). Also, on the causality problem, this debate has continued for more than a century (See Aboutorabi & Aboutorabi, 2012).

Despite, for example, Harris (1997) and Deidda (2006) suggest that the positive effect of financial development on economic growth is robust only in high per capita income countries. In contrast, in low-income countries this effect is insignificant, or even negative. In this line, some discuss the harmful impacts

1. Assistant professor in Economics, University of Bojnord, Iran

Email: nikooghadam@ub.ac.ir

2. Assistant Professor in Economics, Institute for Humanities and Cultural Studies

Email: aboutorabi.econ@gmail.com

of finance on economic growth (Minsky, 1991; Stiglitz, 1994; Manning, 2003; Boyreau-Debray, 2003; Ductor and Grechyna, 2015).

Following the line, this paper empirically tests the effect of inflation, as a determining factor, on finance-growth causality relationship in Iran.

2. Inflation & Finance-Growth Literature

In summary, the related literature suggests that inflation affects finance-growth nexus through all the three channels which financial development affects growth¹:

- 1) Inflation and capital accumulation channel (Li, 2009);
- 2) Inflation and capital productivity channel (Li, 2009);
- 3) Inflation and technological innovation (Romer, 1990; Marquis and Reffett, 1994).

3. Methodology

3.1. Data

Duration: 1961-2016

Financial Sector²:

Ratio of Deposit Money Bank Assets to Central Bank and Deposit Money Bank Assets (DBACBA)

Ratio of Liquid Liabilities to GDP (LLGDP)

Ratio of Central Bank Assets to GDP (CBAGDP)

Ratio of Deposit Money Bank Assets to GDP (DBAGDP)

Ratio of Other Financial Institutions Assets to GDP (OFAGDP)

Ratio of Private Credit by Deposit Money Banks and Other Financial Institutions to GDP (PCRDBOFGDP)

Ratio of Financial System Deposits to GDP (FDGDP)

Ratio of Bank Credit to Bank Deposits (BCBD)

Multilateral Financial Development Index (FD) based on Principal Component Analysis

Real Sector³:

Inflation (INF) based on Consumer Price Index

Real GDP at factor prices growth rate (GR)

3.2. Method

In the present study, the VECM Granger causality approach was used. By comparing the results of two-variate (including financial development indexes and growth) and tri-variate (including financial development indexes, growth and Inflation) estimations, we examined the effect of inflation on finance-growth nexus.

1. For the three channels that financial development led to economic growth see Levine (1997).

2. Data were extracted from Global Financial Development Database (GFDD)

3. Data are extracted from World Development Indicators (WDI)

Furthermore, Principal Component Analysis was used based on covariance matrix to derive a multilateral financial development index.

4. Findings

Table 1 reports the results of testing Granger causality in two- and tri-variate forms.

Two-variate Causality			Tri-variate Causality		
Variables	Variable under the Null Hypothesis	Result	Variables	Variable under the Null Hypothesis	Result
DBACBA & GR	DBACBA	Non-causality	DBACBA & GR & INF	DBACBA & INF	Strong Long-run Causality
	GR	Strong Long-run Causality		GR & INF	Strong Long-run Causality
LLGDP & GR	LLGDP	Strong Long-run Causality	LLGDP & GR & INF	LLGDP & INF	Non-causality
	GR	Non-causality		GR & INF	Non-causality
CBAGDP & GR	CBAGDP	Strong Short-run Causality	CBAGDP & GR & INF	CBAGDP & INF	Strong Short-run Causality
	GR	Strong Long-run Causality		GR & INF	Strong Long-run Causality
DBAGDP & GR	DBAGDP	Strong Long-run Causality	DBAGDP & GR & INF	DBAGDP & INF	Strong Long-run Causality
	GR	Non-causality		GR & INF	Non-causality
OFAGDP & GR	OFAGDP	Strong Long-run Causality	OFAGDP & GR & INF	OFAGDP & INF	Strong Long-run Causality
	GR	Non-causality		GR & INF	Weak Long-run Causality
PCRDBOF GDP & GR	PCRDBOF GDP	Strong Long-run Causality	PCRDBOF GDP & GR & INF	PCRDBOF GDP & INF	Strong Long-run Causality
	GR	Non-causality		GR & INF	Non-causality
FDGDP & GR	FDGDP	Strong Short- & Long-run Causality	FDGDP & GR & INF	FDGDP & INF	Strong Short- & Long-run Causality
	GR	Weak Short-run Causality		GR & INF	Non-causality
BCBD & GR	BCBD	Strong Long-run Causality	BCBD & GR & INF	BCBD & INF	Strong Long-run Causality
	GR	Non-causality		GR & INF	Non-causality
FD & GR	FD	Strong Long-run Causality	FD & GR & INF	FD & INF	Weak Long-run Causality
	GR	Non-causality		GR & INF	Non-causality

5. Conclusion and Policy Implications

By comparing the results of two-variate (in the absence of inflation) and tri-variate (in the presence of inflation) causality tests, we found that neglecting the inflationary conditions may cause fallacies about finance-growth causality in Iran, which in turn, make the financial policies inefficient. In other words, evidence based on two-variate estimations cannot provide reliable policy implications because of the absence of such determining factors as inflation.

Since high rates of inflation distort the potential positive effect of financial development on economic growth, ensuring continuous macroeconomic stability—thorough market-based mechanisms—by the Central Bank can ensure a robust causality between finance and growth. It should be pointed out to the policy-makers that repressed low inflation rates may lead to the same outcomes as high inflation rates.

References

- Aboutorabi, M. A. and Aboutorabi, N. (2012). Financial Development and Economic Growth in Iran: The Survey of the Trend of Financial Development Indicators and its Causality Relationship with Economic Growth in Iran, Lambert Academic Publishing (LAP): Saarbrücken, Germany.
- Ang, B. J. (2008). “A Survey of Recent Developments in the Literature of Finance and Growth”, *Journal of Economic Surveys*, 22(3), 536-576.
- Batuo, M., Mlambo, K., and Asongu, S. (2017). *Linkages between financial development, financial instability, financial liberalisation and economic growth in Africa*. Research in International Business and Finance. In press.
- Beck, T., Lu, L., and Yang, R. (2015). “Finance and growth for microenterprises: evidence from rural china”. *World Development*, 67, 38-56.
- Boyreau-Debray, G. (2003). *Financial Intermediation and Growth: Chinese Style*, World Bank Policy Research Working Paper 3027.
- Calderon, C. and Liu, L. (2003). “The Direction of Causality between Financial Development and Economic Growth”, *Journal of Development Economics*, 72, 321-334.
- Deidda, G. (2006). “Interaction between Economic and Financial Development”, *Journal of Monetary Economics*, 53(2), 233-248.
- Demetriades, P. and Andrianova, S. (2004). *Finance and Growth: What We Know and What We Need to Know*, in C. Goodhart, ed., *Financial Development and Economic Growth: Explaining the Links*, pp. 38–65, Palgrave Macmillan: Basingstoke.
- Demirguc-Kunt, A., Maksimovic, V. (1998). “Law, Finance, and Firm Growth”, *Journal of Finance*, 53, 2107-2137.
- Ductor, L., and Grechyna, D. (2015). “Financial development, real sector, and economic growth”. *International Review of Economics & Finance*, 37, 393-405.
- Harris, D. R. (1997). “Stock Markets and Development: A Re-assessment”, *European Economic Review*, 41(1), 139-146.
- Honohan, P. (2004). *Financial Development, Growth, and Poverty: How Close Are the Links?*, Policy Research Working Paper Series 3203, The World Bank.
- James, B. A. (2008). “What Are the Mechanisms Linking Financial Development and Economic Growth in Malaysia”, *Economic Modeling*, 25(Issue 1), 38-53.

- King, R. G. and Levine, R. (1993a). "Finance, Entrepreneurship, and Growth: Theory and Evidence", *Journal of Monetary Economic*, 32(3), 513-542.
- King, R. G. and Levine, R. (1993b). "Finance and Economic Growth: Schumpeter Might Be Right", *Quarterly Journal of Economics*, 108(3), 717-737.
- Levine, R. (1997). "Financial Development and Economic Growth: Views and Agendas", *Journal of Economic Literature*, 35(2), 688-726.
- Levine, R. (2002). "Bank- Based or Market- Based Financial Systems: Which is Better?", *Journal of Financial Intermediation*, 11(4), 398-428.
- Levine, R. (2005). *Finance and Growth: Theory and Evidence, and Mechanisms*, in P. Aghion and S. Durlauf (eds.), *Handbook of Economic Growth*, Elsevier Science: The Netherlands.
- Li, M. (2009). *Inflation, Finance, and Economic Growth*, PhD Thesis, University of Alberta: Canada.
- Manning, M. J. (2003). "Finance Causes Growth: Can We Be So Sure?", *Contributions to Macroeconomics*, 3(1), 1-22.
- Marquis, M. H. and Reffett, K. L. (1994). "New Technology Spillovers into the Payment System", *Economic Journal*, 104, 1123-1138.
- Minsky, H. P. (1991). *The Financial Instability Hypothesis: A Clarification*, In M. Feldstein (ed.), *The Risk of Economic Crisis*, pp. 158-166, University of Chicago Press: Chicago, IL, and London.
- Rajan, R. G. and Zingales, D. (1998). "Financial Dependence and Growth", *American Economic Review*, 88(3), 559-586.
- Romer, P. M. (1990). "Endogenous Technological Change", *Journal of Political Economy*, 98, 71-102.
- Stiglitz, J. E. (1994). *The Role of the State in Financial Markets*, *Proceedings of the World Bank Annual Conference on Economic Development 1993*, World Bank: Washington.
- Zhang, J., Wang, L., and Wang, S. (2012). "Financial Development and Economic Growth: Recent Evidence from China", *Journal of Comparative Economics*, In Press.