

LONG-TERM FINANCIAL DEVELOPMENT MODEL ACCORDING TO ECONOMIC GROWTH IN IRAN

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Abstract

This study has done to evaluating Long-term financial development on economic growth in Iran according to a model. The population of this study is Islamic republic of Iran economic information during 1981- 2011. In order to investigate the research hypotheses were used the path analysis model and Structural model. We review and test hypotheses through the path analysis model. After explaining the model and data collection, model estimation begins with a set of known relationships between measured variables. The path models as a logical extension of multiple is regression models. The ARDL and bounds testing approach to integration was adopted to estimate the long run relationship and long run dynamic parameters of the model. The test suggests that there exists an integrating relationship variables. Findings show that, financial sector should initiate new policy to boost the process of capitalization to raise economic growth by distributing financial resources to competent and profit oriented projects.

Keywords: *financial resources, economic growth, ARDL*

INTRODUCTION

Growth and job creation require long-term investment in the assets that expand the productive capacity of a modern economy, such as infrastructure, factories and equipment, new housing and commercial buildings, education, and research and development (R&D). Efficiently and seamlessly matching global savings with long-term investment opportunities is a core function of the financial system—but questions loom about whether the supply of financing will be adequate to meet the world's needs. To understand the scale of future demand, we examined nine economies¹ that collectively account for 60 percent of global gross domestic product (GDP) and found that their annual spending on long-term investment totaled US\$11.7 trillion in 2010. Drawing on a range of growth forecasts and investment projections from external sources, we

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estimate that these countries will need annual investment of US\$18.8 trillion in real terms by 2020 to achieve even moderate levels of economic growth (Frenkel and Trichet, 2013).

To sustain growth, economies must build and continually renew the physical and intangible capital that fuels productivity growth and innovation. The ability to develop modern infrastructure will determine whether emerging nations can fulfil their economic potential. It will take an enormous infusion of capital to build transportation networks and deliver education, health care, water, housing, and electricity to growing populations. Advanced economies, too, need long-term investment, since it is one of the few ways to boost economic growth during a time of deleveraging and necessary fiscal consolidation. Many of these countries need to address their aging infrastructure; dramatically accelerate educational attainment and training to build a 21st century workforce; and revitalize innovation, which is the foundation of future progress. Ensuring that businesses can invest in plants, machinery, and commercial buildings not only creates jobs in the immediate term but also enhances future productivity. Amid a fragile recovery, investments of this magnitude are not easily undertaken, but they cannot be deferred indefinitely without risking further economic stagnation (Frenkel and Trichet, 2013: 17-18).

Financial system itself is composed of three major elements. These three elements together and can interact with the financial system that is favorable to the financial and business capital with perfect efficiency, to attract manufacturing sector and the real economy. The three elements are financial markets, financial institutions and intermediaries of financial assets (securities). (Rezaei and Khodaei Valahzagh, 2013).

There are two views of financial development. One holds that financial development is a crucial contributor to growth. While Burgess and Pande (2005) find that the large expansion of branch banks into rural India in the 1970s and 1980s significantly reduced poverty, Kochar (2005) and Panagariya (2008) disagree. Microcredit has been the subject of a similar debate, with some studies finding benefits for the poor (Khandker, 2005), others questioning the evidence (Roodman and Morduch, 2009), and recent experimental and quasi-experimental studies finding mixed results (Banerjee et al., 2009; Kaboski and Townsend, 2009). Yet the conflicting evidence has not stopped practitioners from making strong claims about the positive impact of microfinance.

Financial development contributes to economic growth by improving investment through level and efficiency effects. The level effect suggests that financial sector guide resources from incompetent schemes to profitable ventures. This transparency in financial markets and reporting system attracts domestic as well as foreign investment by enhancing investors' confidence (Mehra and Musai, 2012).

Samadi et al (2007) in a study that examines the relationship between financial market development and economic growth in Iran and 13 other countries have expressed that Stock in the bank and have a significant impact on economic growth, but the stock is positive and significant impact on economic growth. However, survey results show that 14 of the country's financial sector, but the effect is positive and significant impact on banks' stock on economic growth is positive but not significant.

Fakhr Hussein and Shahabi (2007) The effect of stock market development on economic growth in the size of the stock market Granger causality implies that economic growth is not a causal variable liquidity growth rate That the liquidity ratio to economic growth. Hence we can say that the development of stock markets could grow to be more. But due to lack of causal relationship between economic growth and stock and marketing definitive conclusions cannot be made in this case.

Hassanzadeh and Ahmadian (2009) review "of stock market development on economic growth," admits that a positive relationship exists between economic growth and stock market development indicators. However, due to lack of development of Tehran Stock Exchange, its impact on economic growth than the effect of the credit granted by the banking system to the private sector.

Suri et al. (2011) considered the interrelationship between economic growth and human development by using panel data model over the period 1960-2001. In their study, they applied Infant Mortality short-fall Reduction (IMSR) as a proxy of human development improvement and per capita real income growth as the measure of economic growth. They categorized seventy nine developing countries (except Eastern Europe) with population of more than one million, which are divided in four groups through the plan (HD/EG).

- Countries presently in virtuous cycle,
- Countries presently in vicious cycle,
- Countries in inclined cycle towards human development,
- Countries in inclined cycle towards Economic Growth,

Kendal (2012) considered the relationship between banking sector development, human capital and economic growth in states of India. The results resulted that a decline in the ratio of credit to net domestic product from 75% to 25% preceding as an average of 4% decrease in growth rate. In addition, the consequences of his study showed that human capital deepening could decrease financial restrictions.

METHOD

This study has done to evaluating Long-term financial development on economic growth in Iran according to a model, that is

$$LGDP_T = \alpha_0 + \alpha_1 LTG + \alpha_2 LG + \alpha_3 LI + DUMI + TREND$$

The population of this study is Islamic republic of Iran economic information during 1981- 2011. In order to investigate the research hypotheses were used the path analysis model and Structural model. We review and test hypotheses through the path analysis model. After explaining the model and data collection, model estimation begins with a set of known relationships between measured variables. The path models as a logical extension of multiple is regression models.

RESULTS

1- The results of the estimation of the dynamic model

The test software Microfit.4 according to Schwarz Bayesian Criterion Model ARDL (1, 1, 1, 0) as the best model is selected, the output is shown in table 1.

According to the results of the dynamic model is characterized by all except the logarithm of the size of government and investment model variables are significant.

Table 1: The results of the dynamic relationship for the dependent variable (LGDP)

Variable	Coefficients	Statistic
LGDP (-1)	.5313	6.4049 (0.000)
LTG	.0596	2.5052 (0.022)
LG	-0.0186	-0.2425 (0.811)
LG(-1)	0.1436	2.0501 (0.055)
LI	0.0317	1.9981 (0.061)
LI(-1)	-0.0183	-1.1016 (0.285)

LI(-2)	0.0417	2.9365 (0.009)
C	4.6452	3.5028 (0.003)
DUMI	-0.0688	-2.0451 (0.056)
TREND	0.0108	2.2830 (0.035)
R ²	0.9953	
F	601.52	(0.000)
D.W	2.1567	
Diagnostic Tests		
TEST STATISTICS	LM VERSION	F VERSION
Serial Correlation	3.3261 (0.127)	1.4825 (0.240)
Functional Form	0.0108 (0.917)	0.0068 (0.937)
Normality	2.5062 (0.068)	Not applicable
Heteroscedasticity	1.8978 (0.168)	1.8907 (0.180)

The results of Table (1) shows the coefficient of determination equal to 0.9953 is (indicating that 99 percent of economic growth is explained by the independent variables) and F statistic equal to 601.52, which implies explanatory power of the model.

The pathology tests to establish all the classical assumptions (absence of autocorrelation, correct Incident Figure, Residual normal sentences and despite the homogeneity of variance) for the model is verified.

2- Long-term results of estimating the model

Now, using these results, we test dynamic model by the null hypothesis of unit root or no co-integration (long term relationship) between variables. As the above shown, If the sum of the lag coefficients of variables related to the dependent variable is smaller than a dynamic model of the long-term equilibrium model will be biased. The quantity t-statistic for the test is calculated as follows based on what has already been said:

$$\frac{\sum_{i=1}^p \hat{\alpha}_i - 1}{\sum_{i=1}^p s\hat{\alpha}_i} = \frac{\hat{\alpha}_1 - 1}{s\hat{\alpha}_1} = \frac{0/5313 - 1}{0/0936} = \frac{-0/4686}{0/0883} = -5/0073$$

Since the critical value with the 95% confidence level is equal -3.57 the H₀ hypothesis is rejected. So we can conclude that there is a long-term equilibrium relationship between the variables of the model. After testing and ensure the existence of a long-term relationship, a long-term coefficients of the estimated model, which results in a long-term relationship for the model in the table (2) inserted.

Table 2: Results of a long-term relationship for the dependent variable (LGDP)

Variable	Coefficients	Statistic
LTG	0.1435	2.4359 0.025
LG	-0.3010	-2.6967 0.015

LI	0.1327	2.2233 0.037
C	11.1825	-23.0414 0.000
DUMI	-0.1658	-1.7278 0.101
TREND	0.0261	4.2231 0.001

Since the model has a logarithmic Figure, the coefficients of the independent variables are the logarithmic sensitivity and elasticity of the dependent variable to express it.

Estimated coefficients shows positive and negative relationship between the independent variables and the dependent variable (GDP). To point out that these variables are positive or negative effect on the Iranian economy.

As can be seen, all variables are significant at a confidence level of 95% and 90%. Based on the results obtained and the coefficient of the logarithm of the ratio of private credit to GDP, this variable has a positive relationship with GDP. Therefore, one percentage increase in the logarithm of the ratio of private credit to GDP, in the long term, increase the GDP amounted to 14%.

- Logarithm of government size variable is significant and has the expected negative coefficient, meaning that a one percent increase in the government size will decline 30 per cent in GDP.
- Logarithm of investment variable is significant and has the expected positive coefficient, meaning that a one percent increase in the investment will increase 13 per cent in GDP.
- Dummy variable War years is significant and has the expected negative coefficient, in other words, war and insecurity reduce economic growth by as much as 10 percent.

3- Estimates of error correction model (ECM)

Error correction model of economic growth are presented in the Table (3). As can be seen, a relatively high coefficient of determination represents the explanatory power of the model.

Table 3: Error Correction Model

Variable	Coefficients	Statistic
dLGD (-1)	0.5313	5.6763 0.000
dLTG	0.0596	2.5052 0.021
dLG	-0.0186	-0.2425 0.811
dLI	0.0317	1.9981 0.059
dLI1	-0.0417	-2.9365 0.008
dC	4.6452	3.5028 0.002
dDUMI	-0.0688	-2.0451 0.054

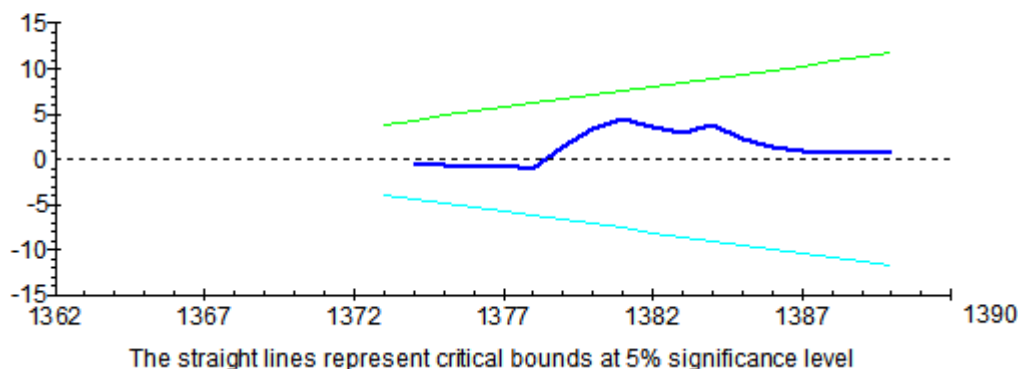
dTREND	0.0108	2.2830 0.035
Ecm(-1)	-0.4154	-3.6434 0.002
R-Bar-Squared= 0.7071 D-W=2.15		F=9.70

4- Structural stability test results

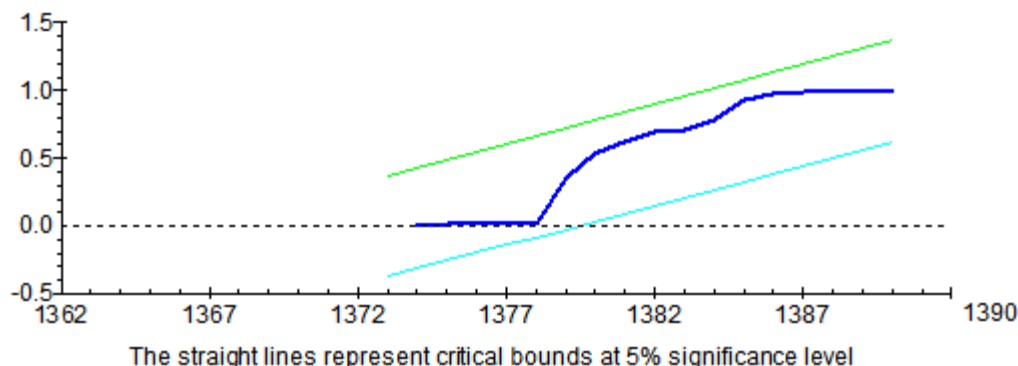
The plots of the cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMSQ) stability tests as shown respectively in figures 1 and 2 indicate that all the coefficients of estimated model are stable over the study period as they fall within the critical bounds.

Figure 1 and 2: CUSUMSQ Plots for Stability Tests

Plot of Cumulative Sum of Recursive Residuals



Plot of Cumulative Sum of Squares of Recursive Residuals



CONCLUSION

The paper has examined the Long-term financial development on economic growth in Iran over the period 1981-2011. The ARDL and bounds testing approach to integration was adopted to

estimate the long run relationship and long run dynamic parameters of the model. The test suggests that there exists an integrating relationship variables. Findings show that, financial sector should initiate new policy to boost the process of capitalization to raise economic growth by distributing financial resources to competent and profit oriented projects.

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