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The Impact of Financial System on Economic Growth in Iran: Markov-Switching Approach

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Abstract

The empirical studies have yielded different results about the importance of the financial sector in economic growth and development of countries as well as the impact of the type of financial structure on their growth. Hence, in the present study, through introducing bank-based and market-based financial structures, the effect of each one on Iran's economic growth has been investigated using the nonlinear technique of Markov-Switching based on the seasonal data during the 2001:4-2014:4. The empirical findings indicate that there is a statistically significant correlation between financial structure and economic growth of the country, so that in terms of the state of stagnation in the bank-based financial structure, there is a great impact relative to the market-based financial structure of the GDP growth in Iran. Therefore, it can be suggested that during recession economists and economic planners can push the financial burden required for the growth and development of firms toward the banks and during the economic boom conditions make use of the capital market as the financing arm of the firms. Besides, in all economic conditions, they need to consider the development and improvement of the financial sector of the economy.

Keywords: economic growth, financial structure, stock market, banking credit, Markov model.

JEL Classification: C22, G20, G21, O43.

1. Introduction

Financial markets will be oriented toward two types of bank-based and market-driven structures. What kind of financial structure can be suitable for economic growth of a society depends on the coordinates for the economic relations of that community. For example, the existence of fluctuations in the capital market in a society may reduce the efficiency of this market (Arestis et al, 2001; Aizenman and Nancy, 1996).

The weaknesses in a part of the financial market (such as the capital market) may have a negative impact on the efficiency of the other (such as the

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bank)(Weinstien and Yafeh, 1998). On this basis, the studies in the field of financial development cannot provide a general conclusion regardless of its subdivisions and this is one of the main weaknesses of internal studies and some external studies because, for instance, the bank-based financial development may be suitable for economic growth in Japan (Hoshi et al, 1991; Mork and Nakkamora, 1995) but for the economy of UK and US the financial development based on the stock exchange might be better. So, as it turns out, the impact of financial market structure on economic growth in a country cannot be a credible version of other economies.

2. Theoretical Basics

2-1. Bank-based financial structure

Bank-based financing structure means that the supply of required resources is often done through the banking system and bank loans. In fact, banks raise the liquidity limitation of financial agencies and increase economic growth by ensuring fair supply of capital (Obstfeld, 1994). Considering evidences such as Germany and Japan's economy, the proponents of this financial structure have several arguments for the advantages of bank-based financial structures.

2-2. Market - oriented financial structure

The market-based financial supply structure refers to providing funds through the stock market and selling shares. This kind of finance structure has its own supporters, and t U.S. and the UK economy are some of its successful examples. Markets have a key role in the stimulation of getting information. Stock shares are considered as an example of high liquidity. In markets with high liquidity, flexibility in individual decision - making and creativity will be higher. The proponents of market-based financial structure also mention numerous advantages for this structure.

3. Empirical Evidence

Some examples empirical evidence related to the comparison between the impact of bank-based and capital-based financial systems on economic growth can be noted. Levin (2002) investigated bank-based and market-driven structures and their impact on economic growth using data from 49 developed and developing countries. According to the results of this study, although financial development has a significant impact on economic growth, being bank-centred or market-oriented does not have a significant effect on growth. In another study, Ayadi et al. (2014) investigated the impact of financial development, banks, and capital on economic growth for the Mediterranean region. According to this study, the bank - based system has a negative impact on growth while the market - based system has a positive and significant effect on the economic growth of the Mediterranean region.

Moradi et al. (2016) studied the impact of bank - based financial supply system on earnings distribution for 16 developing and developed countries using

FMOLS approach. The results of this study indicate that the effectiveness is different in developed and developing countries. For developing countries, market-based financial system has a positive impact on suitable distribution, while the bank-based financial system reduces income inequality in developing countries.

4. Model and Method

In this study, the nonlinear relationship between the financial structure and economic growth of Iran, along with some macroeconomic variables in the framework of the markov Switching model is studied.
In this regard, following the Mishraand and Narayan's (2015) study, the following model is tested:

$$GDPG_t = a + \beta_1(INF_t) + \beta_2(LGCF_t) + \beta_3(LVT_t) + \beta_4(LFS_t) + u_t$$

- GDPG: The growth of the country's GDP during the period under study based on the annual basic costs (first order difference of real GDP log)
- INF: inflation rate (first order difference of log price index of consumer)
- LGCF: The logarithm to form a fixed capital stock
- LVT: The logarithms of the ratio of volume of trade to production (total export and import as a percentage of GDP)
- LFC: it represents the financial structure that can be MC (stock market volume)or dc (the total internal validity offered by the banking sector) and has entered into the model as a log. The model with the bank credit is specified as model (1) and the model with the volume of stock exchange as model (2).

5. Experimental findings

Prior to estimating the model in the first step, reliability of the variables was investigated. According to the obtained results, the GGDP, INF, LDC and LMC level variables level and LGCF and LVT variables will be used by one differentiation. According to the Akaike criterion, MSIAH model was chosen. LR test has also confirmed the model as being nonlinear. The model estimation results are shown in Table 1.

Table 1: Model estimation results

	Model(1): MSIA			Model(2): MSIAH		
Variable	**Coefficient**	**Standard deviation**	**Probability value**	**Coefficient**	**Standard deviation**	**Probability value**
Constant(1)	0/249	0/189	0/195	0/186	0/107	0/084
Constant(2)	-2/286	0/632	0/001	-1/061	0/099	0/000
DLgcf (1)	0/262	0/113	0/026	0/276	0/119	0/025
DLgcf (2)	0/146	0/090	0/112	0/134	0/043	0/003
DLVT (1)	-0/251	0/080	0/003	-0/219	0/089	0/019
DLVT (2)	0/084	0/143	0/561	0/126	0/046	0/009
Inf (1)	-0/188	0/299	0/418	-0/144	0/305	0/640
Inf (2)	0/041	0/300	0/892	-0/005	0/109	0/936
Ldc (1)	-0/009	0/013	0/515	--	--	--
Ldc (2)	0/145	0/042	0/001	--	--	--
Lmc (1)	--	--	--	-0/007	0/011	0/538
Lmc (2)	--	--	--	0/093	0/009	0/000

According to the results reported in Table 1, the variable of credit volume granted by banks has a positive effect on economic growth. However, this variable has a significant effect on economic growth only in regime 2, i.e., stagnation periods.

The coefficient of LMC variable, as in the LDC variable, is nonsignificant in regime 1 and significant in regime 2. The coefficients of this variable in the two regimes are similar to model (1) and expected.

The difference is that the coefficient of the LMC variable is 0.093 and the LDC variable coefficient is 0.145. In other words, the effect of the LDC variable on economic growth seems to be higher than that of the LMC variable.

The results of model estimation also show that the inflation variable in both models does not affect the economic growth variable in any regime. The effect of the fixed capital formation variable, in the first model, is meaningful in regime 1 and has a positive effect on economic growth, as it is expected.

It also has a positive effect on economic growth in regime 2. In model (1), trade volume coefficient is also significant only in regime 1. According to the results, this variable has a negative effect on economic growth in regime one.

The reason why the volume of trade in prosperity periods has a negative effect on economic growth can be that during the period of this study, the period when the economy was booming, the volume of imports increased dramatically.

In other words, the increase in the volume of trade in these courses was mainly due to the increase in imports. The probability of transmission matrix is also presented in Table 2.

Table 2: The possibility of moving from one regime to another

	Model(1)		**Model(2)**	
	Regime1 (t)	**Regime2 (t)**	**Regime1 (t)**	**Regime2 (t)**
Regime1 (t+1)	0/945	0/073	0/942	0/067
Regime2 (t+1)	0/055	0/927	0/058	0/933

6. Conclusion

The results of the present study showed that during economic downturn, the country's economic growth will be more affected by the banking sector and the credits granted by the banks can better stimulate economic growth.

During economic prosperity, however, the effect of market activity is meaningful and bank activity has no significant effect on economic growth. Therefore, based on the obtained results, none of the financial structures is preferred over the other, and both financial structures are important in the economic growth of the country. However, it can be suggested that during recession the economists and economic planners can push the financial supply of the firms to the banks and contribute to the economic boom conditions of the capital market as the financing arm of the firms. In all economic conditions, the development and improvement of the financial sector of the economy must be of utmost importance.

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