

Banking Sector Policies and Financial Development: The Case of Iran

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Abstract

In this paper we empirically examine the effect of various banking policies on financial sector development. To this end, an econometric model in the context of Co-integrated VAR is employed. The results show that financial liberalization and reforms have a significant and positive effect on the banking sector development while inflation rate has a negative effect. Furthermore, the high GDP per capita as a measure of economic development has a positive effect on financial development indicating that the more developed the economy, the more incentive for policy makers to implement financial reforms and thus develop financial sector. This finding is consistent with demand following view.

However, since the current structure of Iranian banking system is not competitive, in order to implement financial liberalization policy, the policy makers should be careful and consider some prudential regulations, supervision and other macroeconomic conditions.

Key words: *financial liberalization, financial reform, bank, co-integrated vector autoregressive*

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1. Introduction

Iran is an emerging country and its financial system has evolved through a number of stages since the 1979 Revolution. After widespread nationalization in the early 1980s, the reform of financial system in the early 1990s focused on improving the regulatory environment and streamlining controls to enhance efficiency. For example, in the second Five Year Development Plan (FYDP) (1995-1999) the reform emphasized on setting interest rate at levels that ensure positive real return on bank deposits, issuing investment certificates, and encouraging the entry of private non-bank credit institutions. Furthermore, in the third FYDP (2000-2004) the reform focused on decreasing the use of administrative controls on credit allocation and interest rate, recapitalization of the state banks by issuing participation papers, preparing the condition for the operation of private banks and non-bank credit institutions, and planning to decline the nonperformance bank loans. In the 4th FYDP (2005-2009) the reforms focused on reducing the government intervention in the allocation of bank credits where any loan under the rate below the approved interest rate by the Money and Credit Council was compensated by the government or the loan was made by administered funds. Finally, in the 5th FYDP (2011-2005) the reforms focused on setting the interest rate of deposits with maturity of one year with the average expected inflation rate during the current and previous years; the reform also emphasized on developing the rating system of borrowers and creating deposit insurance. As a result of these reforms, some steps but not so much was taken to relax financial repression.

Some studies have tried to investigate what government can do to develop financial sector. For example, Taghipour (2009), among other policies examines the effect of financial restrains on banking sector development for the case of Iran. However, he did not consider other factors affect the financial sector development. To help shed light on this issue, this paper attempts to empirically examine the effect of financial

liberalization and other macro policies on financial development for the case of Iran over the period 1960-2007 by employing the co-integration VAR model introduced by Pesaran and Shin (1998).

The rest of this paper is structured as follows: section 2 provides a brief review of the existing literature. Section 3 specifies the model and econometric methodology as well as outlines the data sources. Section 4 presents the main empirical results and discussions. Some concluding remarks are provided in the final section.

2. Financial Policy and Financial Development: Theory and Evidence

There is a large body of research aiming to respond to the question of what governments can do to assist the development of financial sector. Greenwood and Jovanovic (1990) argue that the process of economic growth motivates higher participation in financial markets; therefore, facilitating the creation and expansion of financial institutions. The view is called demand following view which mentions the demand for financial services as dependent upon the growth of real output and the commercialization and modernization of agriculture and other subsistence sectors. Thus, the creation of modern financial institutions, their financial assets and liabilities and related financial services are a response to the demand for these services by investors and savers in the real economy. On this view, the more rapid growth of real national income, the greater will be the demand by enterprises for external funds (the savings of others) and therefore financial intermediation, since in most situations firms will be less able to finance expansion from internally generated depreciation allowance and retained profits. The importance of income levels for financial development has been addressed in Levine (1997) as well.

Another view is termed supply leading view which is transferring resources from the traditional low-growth sector to the modern high-

growth sector, promoting, and stimulating an entrepreneurial response in these modern sectors. This implies that the creation of financial institutions and their services occur in advance of demand for them. Thus, the availability of financial services stimulates the demand for these services by the entrepreneurs in the modern, growth-inducing sectors.

Huybens and Smith (1999) theoretically investigate the effects of inflation on financial development and conclude that economies with higher inflation rates are likely to have smaller, less active and less efficient banks and equity markets.

At the empirical level, while English (1999) provides cross-country evidence in support of a positive effect of inflation on the size of financial sector, Haslag and Koo (1999), Boyd, Levine and Smith (2001) and Khan, Senhadji and Smith (2006) show a negative and even nonlinear relationship between inflation and financial development. Haslag and Koo (1999) argue that inflation is associated with financial repression and find a negative relationship between inflation and financial development, but the relationship disappears with increases in the inflation rate above a threshold. Boyd, Levine and Smith (2001) reach similar results and show that such an inflation threshold occurs at 15 percent per year. By contrast, Khan, Senhadji and Smith (2006) find that the threshold level of inflation is about 3-6 percent, and for rates of inflation above the threshold level, further increases in inflation have strongly negative effects on financial development.

La Porta et al., (1997, 1998) emphasize the legal determinants of financial development. Beck et al. (2003) address how institutions matter for financial development. Mayer and Sussman (2001) emphasize that regulations concerning information disclosure, accounting standards, permissible practice of banks and deposit insurance appear to have material effects on financial development.

Apart from these, research has been carried out to study the effects of financial liberalization on financial development over the past three

decades following the McKinnon (1973) and Shaw (1973) model which conclude that financial repression reduces the quantity and quality of aggregate investment; therefore, financial liberalization can foster economic growth by increasing investment and its productivity.

The McKinnon and Shaw model implicitly assumes that banking institutions operate under perfect competition with perfect information (McKinnon, 1981; Fry, 1980). However, Courakis (1984) and Demetriades and Luitel (2001) argue that the structure of banking system in many developing countries is not competitive and show that Departure of the benchmark model from perfect competition has significant implications for the way in which repressive policies affect financial development. Therefore, under conditions of imperfect information some forms of financial restraints including mild interest rate ceilings may contribute to reduce agency cost and may lead to greater financial deepening in the presence of good governance in the financial system. In contrast, the high real interest rates which are associated with financial liberalization in monopoly market may make the financial system vulnerable to crises by worsening the problem of adverse selection and moral hazard (Arestis and Demetriades, 1997).

There is a growing literature that attempts to explain the role of liberalization in destabilizing financial sector resulting in crisis and economic decline. Indeed, the important contribution to the relevant literature is to demonstrate the existence of asymmetric information in the financial sector (Stiglitz, 1994). These problems even would be magnified if domestic liberalization were accompanied by external liberalization especially short term capital flows (Stiglitz, 2000). This school of thought recognizes that financial markets do not necessarily provide the expected correct signals when left to their own devices. Consequently, state intervention through the creation of moderate forms of financial restraints may lead to socially better outcomes. Hellmann et al. (2000) argue that in an environment of informational imperfections,

financial liberalization might affect the stability of the banking sector. They show that financial liberalization involving increased banking sector competition and the elimination of ceilings on deposit rates can undermine prudent bank behavior and may lead to excessive risk taking by banks and therefore increase financial fragility.

While the neo-classical "laissez-faire" prescriptions have been challenged ° in theory by the development of information economics and in practice by the mostly disappointing results from financial liberalization - there is no consensus yet of what constitutes a good set of financial policies. The only point on which a consensus seems to exist is that financial policies matter. King and Levine (1993) and Levine and Zervos (1998) identify financial depth as the most important explanatory variable in a large set of cross-country regressions.

Arestis et al. (2002) examine the effect of a number of financial restraints, including restrictions on the interest rates of deposit and lending, and reserve and liquidity requirements on financial development in a sample of six developing countries: Greece, Thailand, Philippines, Korea, India and Egypt. They find that the effect of financial policies vary considerably across the countries. Hachicha (2005) finds that in the long and short terms, financial repression had significant and negative effect on financial development in Tunisia. The similar result also obtained by Ang and Mc-Kibbin (2007) for the case of Malaysia.

3. Model Specification

In literature, many economic models and empirical studies investigate factors affecting the financial sector development. These studies mainly emphasize the role of government policies such as financial liberalization and other macro policies as well as the quality of legal institutions. In this paper, following the Chinn and Ito (2005) study, we use the following equation:

$$FD_t^* = \beta_0 + \beta_1 FL_t + X_t \mu + \varepsilon_t \quad (1)$$

Where FD^* is dependent variable and indicating financial development indicators, measured by credit to private sector as a ratio of GDP.

FL is financial liberalization index. In this study, FL is constructed following the methodology used by Abiad et al. (2008) and Abiad and Mody (2005). We then use the following 5 elements to construct FL index using the Principal Components Method (PCM):

- Credit control and use of high reserve requirements
- Interest rate controls
- Entry barriers to the banking sector
- Government ownership of banking sector
- International capital controls

Each of the above elements is coded between 0-3 depending on the degree of liberalization in each element. So, the aggregate index changes between 0-15. Code 0 indicates less liberalization while 15 shows highly financial liberalization.

X is a vector of economic control variables including the following variables:

- GDP per capita (y): According to the Demand-Following hypothesis, when GDP in the economy increases, it demands for financial services sector expansions and innovations, consequently the financial sector in response to this demand extends.
- Inflation rate (P^0): high inflation rate is one of the obstacles to the financial development. When inflation rate is high, bank savings decline and move toward its alternative assets such as real estate, gold and so on. Therefore, there is a negative relationship between inflation rate and FD.

4. Data Source

The source of all macroeconomic variables is the Iranian central bank which is available in the bank website www.cbi.ir. The data frequency is

annual and covers the period 1960-2007. The choice of the period is based on the availability of time series data for all variables.

All information regarding different financial policies during the period under investigation was obtained from the *Economic Report and Balance Sheet* of the central bank of Iran (various issues).

5. Estimation Results

In order to examine the effect of policy variables, I use the Generalized Impulse Response Function (GIRF) based on Co-integration Model introduced by Pesaran & Shin (1998). Using this method the effect of a shock in one variable at a certain time on other variables in later periods in a dynamic model is examined. The reason using this approach is that all the variables are non stationary while be stationary after the first difference¹. When variable in the VAR model are not stationary we cannot use the Wold decomposition to calculate Impulse Response Function, as a result here we use the ECM model and our IRF will be based on the ECM model.

The Impact Response Functions

In order to investigate the impact of variables on financial development we use the generalized impulse response function in the context of co-integrated VAR. the results are presented in Figures 1 to 3.

Figure 1 shows the effect of shock in financial liberalization index on financial development and other variables in the model. As shown in the graph, a positive shock in the index of financial liberalization leads to increase in financial development index. Moreover, as a result of financial liberalization shock, both per capita GDP and inflation rate increase. The reason of increased inflation rate perhaps due to the fact that as a result of financial liberalization (including interest rate liberalization and credit controls lifting and reduced legal reserves requirement and ...) financial intermediation may increase and more

1-The result is now reported here but available up on request.

resources will be available but banking system may not effectively allocate these resources in productive sectors; instead, banks allocate them in those sectors making inflation.

Figure (1) The effect of shock in financial liberalization on financial development and other variables (Generalized Impulse Response (s) to one S.E. Shock in the Equation for FL1)

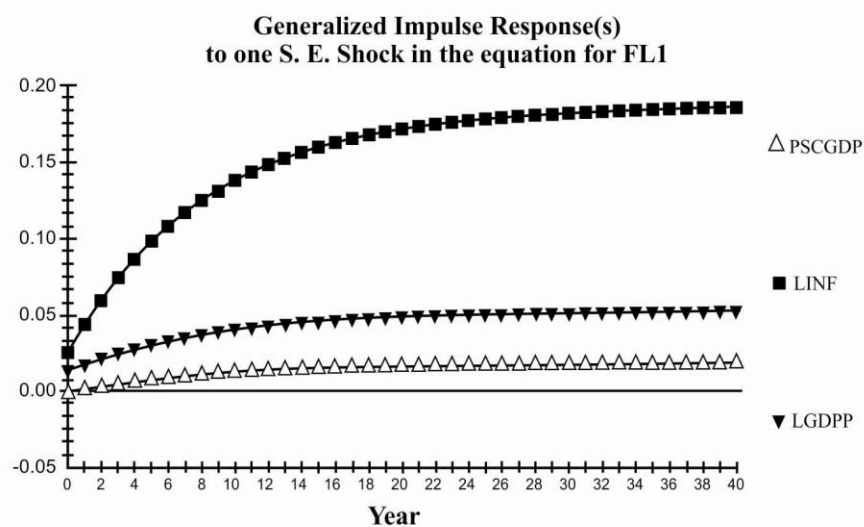


Figure 2 represents the effect of shock (one standard deviation) in inflation rate on financial development and the other variables. Based on the results, we can see that as a result of increase in inflation rate financial development has decreased continuously. Inflation shock also will reduce the financial liberalization index. The findings are consistent with those in Haslag and Koo (1999), Boyd et. al., (2001) and Khan et. al., (2006) show a negative relationship between inflation and financial development.

Figure (2) The effect of shock in inflation rate on financial development and other variables

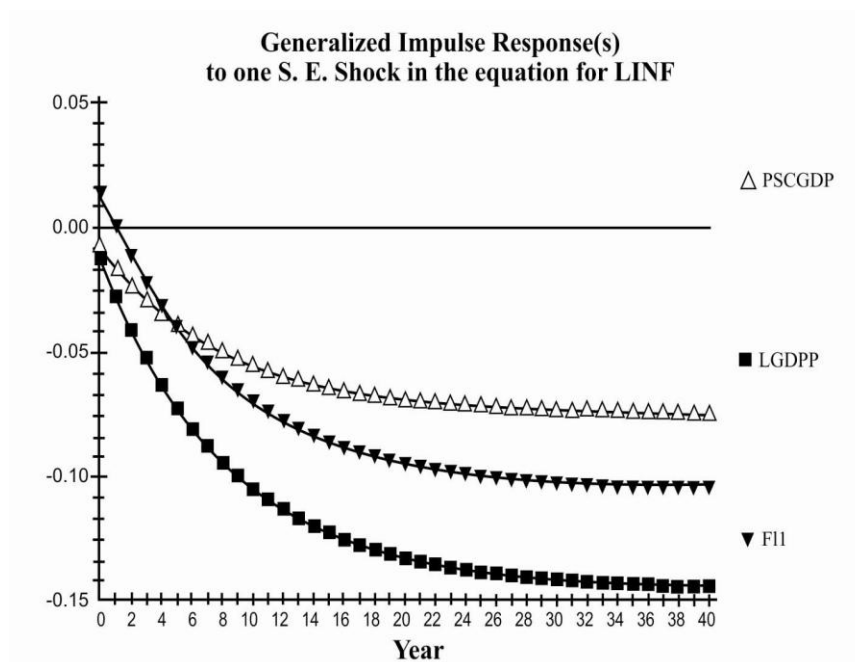
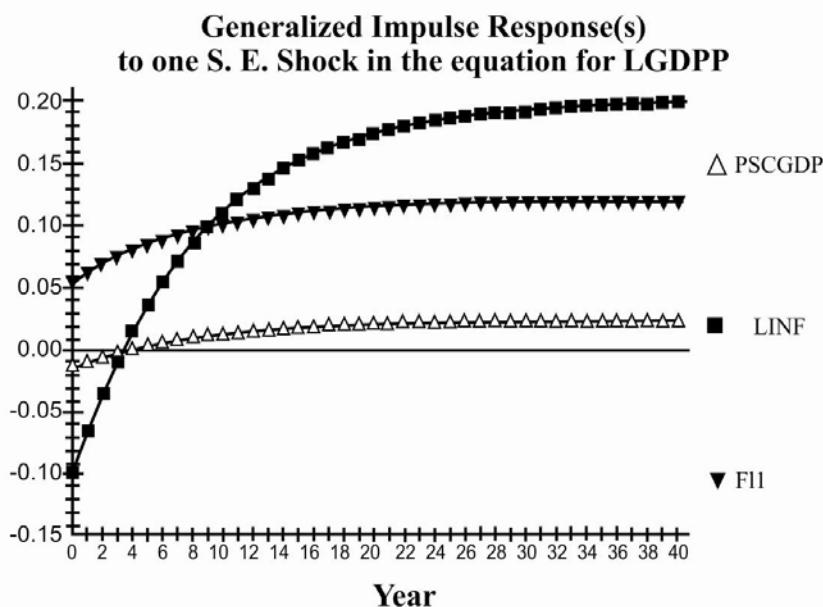


Figure 3 shows the effect of increase in GDP on financial development and other variables. Based on the results of impulse response function, increase in per capita GDP facilitates the implementation of financial reforms and thus increase financial sector development. This finding is consistent with demand following view. On this view, the more rapid growth of real national income, the greater will be the demand by enterprises for external funds (the savings of others) and therefore financial intermediation

Figure (3) The effect of shock in GDP on financial development and other variables



5. Concluding Remarks

In this paper, the effect of various macro and financial policies including the financial restraints and liberalization on financial development has been studied. To this end, an econometric model was specified and estimated using the Co-integrated VAR over the period 1960-2007 for the case of Iran. The results show that financial liberalization and reforms has a significant and positive effect on the banking sector development. To obtain the more advanced financial system, some reforms in financial system are necessary. However, since the current structure of Iranian banking system is not competitive, in order to implement financial liberalization policy the policy maker should be careful and consider the some prudential regulation and supervision.

Furthermore, our results show that inflation rate has a negative effect on financial liberalization and financial development. Therefore, in order

to implement a successful financial reform and liberalization low inflation environment is helpful. The high inflation rate may cause bank savings decline and move toward its alternative assets such as real estate, gold and so on.

Finally, increase in GDP per capita as a measure of economic development has a positive on financial development which indicates that increase in per capita GDP facilitates the implementation of financial reforms and thus increase financial sector development. In other words, the more development the economy, the more incentive for policy makers to implement financial reforms and thus develop financial. This finding is consistent with demand following view. On this view, the more rapid growth of real national income, the greater will be the demand by enterprises for external funds (the savings of others) and therefore financial intermediation.

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