Business Cycle and SME’s Government-Supported Financing

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Abstract: This paper is the first analysis to investigate the role of SMEs' government-supported financing to mitigate the excessive impact of business cycle. The financial crisis initiated from the USA in 2007 has given the lesson that the relation between the real estate sector and the financial sector can form a vicious cycle after a financial crisis. To eliminate the cycle, the government put a large amount of public funds into financial institutions to stabilize the financial market.

This bad experience forces G20 and BIS to design the financial landscape to separate the contagion from financial crisis to real estate crisis. Considering the discussion in global meetings up to now, the main concern to keep the vicious cycle from starting is to expand the capital requirements.

SMEs face more a difficult situation to have access to financial institutions in either in the financial crisis or in the depression of the business cycle. In many countries, the most difficult problem to manage SMEs in the normal times is to get a loan from public financial institutions.

This paper is to analyze the possibility that an institution to provide government-supported financing can play a great role in supplying a credit line to SMEs in a financial crisis. In Korea, it is known that some kinds of credit guarantee institutions including KODIT, KIBO and KOREG, and SBC can play a counter-cyclical role in supplying loans to weak SMEs.

In the 2007-2009 financial crisis, as shown in tables and figures of the paper, the national banks in Korea decreased the increment of loans in spite of the increase of SMEs' total loans and accelerated the impact of the credit crunch generated from the contagion of the American financial crisis. To mitigate the severe credit shrinkage to SMEs, government-sponsored financial institutions actively increased the supply of loans and credit guarantees. These roles made a big contribution to Korea’s fast economic recovery from the deep depression, compared to other countries. This financial crisis demonstrates the importance of the second credit lines, such as government-sponsored financial institutions, in the case of a sudden credit crunch of private financial institutions.

This paper investigates whether financial institutions to provide government-supported financing to SMEs have performed the asymmetric role that they increase credit guarantees and the loans in periods of reduced economic activity, but decrease them during periods of growth. KODIT and SBC among the four government-supported financial institutions have a long history. Hence the asymmetric role of KODIT and SBC in the business cycle is investigated by using annual data. The reason to use annual data is that although KODIT publishes data monthly and quarterly, SBC only publishes annual data.

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The period for available data is 1976 to 2008 for KODIT and 1979 to 2008 for SBC. Since the period is short, the empirical analysis might have the small sample problem. To minimize the small sample problem, this paper tries to limit the number of independent variables to increase the degree of freedom. The empirical method used in this paper to limit the number of independent variables is that, deciding the determinants of growth rate of real GDP, the variables to denote the asymmetric effect of the increase or decrease of government-supported fund are included in the regression.

The asymmetric effect of government-supported financing institution in the business cycle is measured as follows: first, to identify whether the growth rate of guarantee is positive or negative; second, divide the time series of growth rate into series of positive growth rates and series of negative growth rates, following Mork (1989), Dotsey and Reid (1992), Cover (1992); third, investigate the relation between positive growth rate of KODIT's guarantee and economic growth rate, and the relation between negative growth rate of KODIT's guarantee and economic growth rate, with control variables in the regression; fourth, taking the same procedure with the third step for positive and negative growth rate for SBC's loan; finally, the results in the regression for two institutions can be compared. The special remark in the growth rate of KODIT and SBC is that the positive growth rate series consist of dummy variables 0 or 1 in which positive values become 1, and the negative growth rate series also consist of dummy variables 0 or 1 in which positive values become 1.

In <Table 3>, equations, CG(1) and CG(2), are to identify determinants of growth rate of real GDP. In equation CG(3), growth rate of credit guarantee in the period of positive growth rate in KODIT has a statistically significant effect on negative impact on the current growth rate, and on positive impact from the first lag period. It takes more than two years in making the positive contribution of credit guarantees to the real economic growth.

But in equation CG(4), the growth rate of credit guarantee in the period of negative growth rate in KODIT has a statistically insignificant and negative impact on the growth rate of GDP.

The sign of government-supported financing guarantee variables in CG(3) and CG(4) except the statistical significance of coefficients is consistent with the asymmetric impact to stabilize the business cycle.

CUSUM test for equations in <Table 3> is shown to be stable in <Figure 3>. There is no structural break in the period analyzed.

In <Table 4>, any statistically significant variables are not found in equations SBC(1) and SBC(2). In the equations SBC(3) and SBC(4) to analyze the asymmetric impact of SBC's loan, the growth rate of loans both in the period of positive growth rate and in the negative growth rate has a statistically insignificant impact on the growth rate.

The sign of government-supported financing loan variables in SBC(3) and SBC(4) except the statistical significance of coefficients is consistent with the asymmetric impact to stabilize the business cycle.

CUSUM test for equations in <Table 4> is shown to be stable in <Figure 4> with no structural break.

This paper shows that the Korean government-supported SME financing system has made a minor or major contribution in mitigating the pro-cyclicality in the financial system and is essential in the contribution of economic growth. But empirical analysis in this paper is not sufficient in supporting the evidence on the role of counter-cyclicality in the Korean government-supported SME’s financing system.

[Keywords] Smes’ Financial Support Institution, Credit Guarantee, Government-Supported Financing, Asymmetric Impact, Business Cycle