

Research on the Impact of Macroeconomic Fluctuations on the Market Value of Enterprises

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Administration, Anhui University of Finance and Economics Bengbu, 2330003School of Accounting, Anhui University of Finance and Economics, Bengbu 233000Abstract: This article takes A-share listed companies in China from 2004 to 2019 as a research sample, and investigates the impact of macroeconomic fluctuations on the operating debt behavior of listed companies under the background of macroeconomic fluctuations, and the relationship between corporate operating debt decision-making and corporate value. The results find that: During the economic downturn, companies use operating liabilities more actively, and operating liabilities have a stronger effect on the promotion of corporate value and companies with strong residual operating liabilities have higher value. This paper has enriched the empirical evidence of the relationship between macroeconomic fluctuations and micro-firm financial behavior, and has certain enlightenment significance for company managers to grasp the law of macroeconomic development and make scientific and reasonable debt decisions.

Keywords: Macroeconomic Fluctuations; Operating Liabilities; Financial Liabilities

1. Introduction

Fletham and Ohison believe that, according to the contributing way for the growth of corporate value, corporate liabilities should be divided into operating liabilities and financial liabilities^[1]. Compared with interest-bearing financial liabilities with stronger financial constraints, operating liabilities have unique contractual connotations and incentive and supervision mechanisms. With the continuous development of commercial credit, operating liabilities have become an important external financing method for enterprises. Especially for developing countries where the financial system is not yet sound, and the financial market is dominated by the banking system, operating liabilities are used as an informal financing channel for enterprises. The supporting role of corporate growth is particularly obvious.

According to the system theory, enterprise organization is a smaller subsystem in the large-scale environmental system, and the financial behavior of micro-enterprises will inevitably be affected by the macroeconomic environment. The characteristics of business cycle fluctuations are the true response to the actual economic operation. The macroeconomic environment will affect the company's financing constraints through the degree of external capital market friction. The bank's lending behavior is often expressed as "icing on the cake" rather than "sending charcoal in the snow", and the financial system and the economic cycle show the same. Operating liabilities are the "extracorporeal circulation" of the formal financial market and must be closely related to the macroeconomic environment. In the market economy environment, debt can often become an effective corporate governance mechanism and enhance corporate's value. As a special type of liability related to specific transaction behaviors, operating liabilities have information and

control advantages, which can restrain management behaviors and exert information transmission effects. During the economic downturn, the environmental uncertainty faced by enterprises has increased, and information asymmetry has further intensified. Can operating liabilities effectively perform corporate governance functions at different stages of the macro economy? China is in a period of economic transition. Although the absolute total economic volume has been increasing, the economic growth rate has shown different characteristics. In the context of the global economic downturn and the large fluctuations in the China's economy, it is necessary to study whether the ability of remaining operating liabilities can be studied. It has an important practical significance to become an effective tool for enterprises to deal with adverse macroeconomic shocks.

2. Theoretical analysis and research hypothesis

As far as the capital demand side is concerned, the investment opportunities and business scale faced by enterprises at a specific decision point is objective, so the amount of capital required is basically unchanged. As a rational economic man, his financing will be weighed between availability and cost. Only when the source of funds from low-cost channels cannot meet the financing needs, he will seek higher-cost financing. Regarding financing costs, according to general empirical research, commercial credit is higher than bank loans. During the economic boom, companies can obtain bank loans conveniently and at low cost^[2]. Therefore, there is no need to choose higher-cost commercial credit to meet their needs. At this time, the use of operating liabilities is for business purposes. Compared with the operating liabilities formed in normal business activities and commodity transactions during the prosperous economic period, companies will rely on the situation when they are unable to obtain financial support, and turn to operating liabilities to ease financing constraints during the economic downturn. Credit financing is more active in the use of operating liabilities. In empirical research, love, et al. proved that commercial credit increased during the peak of the financial crisis, and decreased in the later period^[3]. The research of Shi Xiaojun and Zhang Shunming shows that the substitution relationship between commercial credit and bank borrowing has the characteristics of synchronous counter-economic cycle in China^[4]. According to the aboves, companies will be active in operating debt financing during the economic downturn.

Hypothesis 1: Compared with the economic downturn, companies use more active operating liabilities during the economic downturn.

Hypothesis 2: Compared with the economic boom period, the role of operating debt in enhancing the value of the enterprise is stronger in the economic downturn period.

Hypothesis 3: During the economic downturn, companies with strong residual operating debt capacity have higher corporate value than companies with weak residual operating debt capacity.

3. Research design

3.1 Samples and data

This article takes China's A-share listed companies from 2004 to 2019 as the research object. The main sample financial data comes from the CSMAR database. Among them, the STATE and TOPI data come from the CCER database; The macroeconomic fluctuation data comes from the 2004-2019 China Statistical Yearbook and China Statistical Finance Yearbook. On this basis, the screening is carried out in the following principles: (1) Exclude financial listed companies. (2) Exclude the samples of companies that are listed at the same time at home and abroad, and A-shares and B-shares are listed at the same time, to avoid the impact of different financing environments on operating liabilities. (3) Exclude companies listed after 2004 with incomplete data. In the end, 8970 observations from 897 companies were obtained. Since the sample observations used to test the research hypothesis 3 come from the economic downturn, it is 3588 sample observations. In order to reduce the influence of outliers, this paper performs Winsorized tailing processing on variables between 0-1% and 99%-100%. All data regression is completed by STATA12.0 software.

3.2 Model design

To test Hypothesis 1, build the following model:

$$ODEBT = \beta_0 + \beta_1 MACRO + \beta_2 ControlVariables + \varepsilon \quad (1)$$

MACRO represents economic fluctuations, which are measured by two methods: The growth rate of gross domestic product (GRGDP) and the dummy variable of macroeconomic fluctuations (UD). Drawing on the research methods of Ge and Qiu, the choice of control variables considers the bank loans (BANK), corporate accounts receivable (REC), corporate performance (ROA), growth (GROWTH), scale (SIZE), etc. Factors that may affect operating liabilities. Industry control variables are also included in the model.

To test Hypothesis 2, build the following model:

$$TovinQ = \beta_0 + \beta_1 MACRO + \beta_2 ODEBT + \beta_3 MTCRO * ODEBT + \beta_4 ControlVariables + \varepsilon \quad (2)$$

Draw lessons from the practice of Chen Dong, Tang Jianxin and other corporate financial research literature and combine the characteristics of listed companies in China to introduce corporate growth (GROWTH), the shareholding ratio of the largest shareholder (TOP1), corporate financial leverage (LEV). Variables such as profitability (ROA), proportion of tangible assets (TANG), age of company listing (AGE), and property rights of the company's ultimate controller (STATE) are used to control the impact of company-related characteristics on the value of the company[2]. In addition, in order to eliminate the influence of the industry, we added industry dummy variables to the equation.

To test Hypothesis 3, the following model is constructed:

$$TovinQ = \beta_0 + \beta_1 DUMMY + \beta_2 ODEBT + \beta_3 DUMMY * ODEBT + \beta_4 ConVariables + \varepsilon \quad (3)$$

4. Empirical analysis

Table 1 reports the regression estimation results, and use the gross domestic product growth rate (GRGDP) and macroeconomic volatility dummy variables (UD) respectively to examine the impact of economic volatility on operating liabilities. In the model that uses GRGDP and UD to measure macroeconomic fluctuations, GRGDP, UD and the explained variable ODEBT all have a significant negative correlation, indicating that the operating debt ratio of enterprises in the economic boom period is lower than the economic downturn period, which confirms the research hypothesis 1 that company are more active in using operating liabilities during the economic recession.

Table 1. Regression results of factors affecting operating liabilities.

| | MACRO=GRGDP | | MACRO=UD | |
|--------------------|-------------------------|----------|-------------------------|----------|
| | Regression coefficients | T | Regression coefficients | T |
| Constant | 0.452 | 7.58*** | 0.443 | 8.23*** |
| MACRO | -0.256 | -2.64*** | -0.025 | -6.69*** |
| BANK | -0.154 | -6.93** | -0.153 | -6.97*** |
| SIZE | -0.006 | -2.11** | -0.006 | -2.26** |
| ROA | -0.537 | -9.60*** | -0.536 | -6.96*** |
| GROWTH | 0.021 | 7.48*** | 0.022 | 7.63*** |
| REC | 0.157 | 6.29*** | 0.175 | 7.05*** |
| INDU | YES | | YES | |
| N | 8970 | | 8970 | |
| F | 117.74*** | | 119.96*** | |
| Adj-R ² | 0.16 | | 0.164 | |

In order to analyze the relationship between operating liabilities and corporate value in different macroeconomics,

we performed multiple linear regression on Model 2, with corporate value (TOBINQ) as the explained variable. The left side of Table 2 is a linear regression using GDP growth rate (GRGDP) to measure macroeconomic fluctuations. The results show that the regression coefficient of GRGDP is significantly positive, indicating that the company's corporate value is lower in the economic down phase compared to the economic up phase, and macroeconomic fluctuations have a certain impact on the corporate value; ODEBT is positive at the 1% level. It shows that operating liabilities have a certain degree of improvement in corporate value; The regression coefficient of GRGDP*ODEBT is negative at the 10% level, indicating that operating liabilities can improve corporate value during economic downturns. The empirical results support Hypothesis 2.

Table 2. Regression results of factors affecting corporate value.

| | MACRO=GRGDP | | MACRO=UD | |
|--------------------|-------------------------|-----------|-------------------------|-----------|
| | Regression coefficients | Wald | Regression coefficients | Wald |
| Constant | 0.452 | 5.05*** | 2.061 | 23.95*** |
| MACRO | -0.256 | 5.47*** | 0.064 | 1.05 |
| ODEBT | 2.409 | 3.97*** | 1.646 | 10.01*** |
| MACRO*ODEBT | -8.889 | -1.53* | -0.223 | -1.02 |
| ROA | 1.619 | 5.29*** | 1.696 | 5.53*** |
| LEV | -0.640 | -6.84*** | -0.642 | -6.90*** |
| GROWTH | 0.006 | 0.29 | 0.012 | 0.58 |
| TOP1 | -1.002 | -13.89*** | -1.704 | -14.95*** |
| STATE | -0.280 | -10.29*** | -0.274 | -9.92*** |
| TANG | -0.611 | -7.48*** | -0.590 | -7.19** |
| AGE | 0.054 | 16.77*** | 0.038 | 12.45*** |
| INDU | YES | | YES | |
| N | 8970 | | 8970 | |
| F | 65.38*** | | 60.03*** | |
| Adj-R ² | 0.169 | | 0.158 | |

In order to explore whether enterprises can adjust the remaining operating debt capacity, and use operating debt as a tool to deal with the impact of the macroeconomic downturn on enterprises, we performed multiple linear regression on Model 3. When the 0.3 quantile is used to measure the residual operating debt capacity on the right side of Table 3, the significance level and sign of DUMMY remain unchanged, and the coefficient increases, indicating that the company with stronger residual operating debt capacity will perform corporate value during the economic downturn. The regression coefficient of ODEBT* DUMMY is positive and significant, which is also larger than the coefficient when the 1/2 quantile is used as the quantile. A better use of financial tools to enhance corporate value is consistent with research hypothesis 3.

Table 3. Surplus Operating Debt Capability and Enterprise Value in Economic Downturn.

| | 30% | | | |
|--------------------|-------------------------|----------|-------------------------|----------|
| | Regression coefficients | T | Regression coefficients | T |
| Constant | 2.442 | 17.97*** | 2.507 | 18.59*** |
| ODEBT | 1.899 | 10.57*** | 1.661 | 9.83*** |
| DUMMY | 0.278 | 5.30*** | | |
| ODEBT*DUMMY | | | 0.632 | 2.06** |
| ROA | 0.778 | 1.57*** | 0.717 | 1.43* |
| LEV | -0.662 | -4.47*** | -0.624 | -4.14*** |
| GROWTH | -0.005 | -0.16 | -0.004 | -0.13 |
| TANG | -0.534 | -3.93*** | -0.548 | -4.01*** |
| TOP1 | -1.071 | -8.98*** | -1.076 | -8.99*** |
| STATE | -0.386 | -8.44*** | -0.394 | -8.56*** |
| AGE | 0.004 | 0.69 | 0.006 | 0.96 |
| INDU | YES | | YES | |
| N | 3588 | | 3588 | |
| F | 0.1509 | | 0.1447 | |
| Adj-R ² | 26.60*** | | 26.41*** | |

5. Conclusions

This paper examines the relationship between operating liabilities and corporate value under macroeconomic fluctuations by using 8970 samples of A-share listed companies from 2004 to 2019.. The results of empirical research show that: Compared with economic downturns, companies use operating liabilities more actively during economic downturns; Compared with the economic downturns, operating liabilities have a greater effect on enterprises value in the recession ; Economic downturns, companies with stronger residual operating debt capacity have higher corporate value. The financial behavior of micro-enterprises is closely related to the operating environment of the macro-economy in which they are located. During the economic downturn, enterprises will be more proactive in using operating liabilities to ease the unavailability of bank credit financing and obtain the needed funds ; Operating liabilities have supervisory constraints and information transmission effects, and their financial governance and signal transmission functions are stronger during economic downturns, which can increase corporate value; Companies can reduce macroeconomic downturns through the remaining operating debt capacity that they reserve during economic downturns. The unfavorable impact on corporate credit financing will enhance the value of the company in the downturn.

References

1. Feltham G.A., Ohlson J.A, Valuation and clean surplus accounting for operating and financial activities. *Contemporary Accounting Research*, 1995; 11(2): 689-731.
2. Chen D, Tang J: "Institutional investor shareholding, tax avoidance and rent-seeking, and corporate value" (in Chinese) [J]. *Economic Review*, Issue 6, 2013.
3. Love I., Preve L.A., Sarria-Allenda V. Trade credit and bank credit: evidence from the recent financial crises(in Chinese) [J]. *Journal of Financial Economics*, 2007; 83(2): 453-469.
4. Shi X, Zhang S: Research on commercial credit and bank loan substitution behavior in the economic cycle(in Chinese) [J]. *Journal of Management Science*, No. 13, 2010.