

VAT reduction and corporate investment – Based on the civil engineering firm

Mengjiao Zheng^{1,*}

¹ Department of Accounting, Beijing jiaotong University, 100089 Beijing, China

Abstract. Existing studies have shown that VAT reform stimulates business investment. In this paper, civil engineering firm are taken as samples to study whether the reduction of VAT will stimulate the investment of civil engineering firm by referring to the domestic and foreign literature related to enterprise investment in tax reform.

1 INTRODUCTION

Tax reform leads to an increase in cash flow from operating activities, which is conducive to stimulating enterprise investment, promoting technological innovation, upgrading of industrial structure and transformation of economic growth mode. At present, many scholars study the impact of VAT transformation on enterprise investment, and the research shows that there is a positive correlation between VAT transformation and enterprise investment. However, the impact of VAT reduction on enterprise investment has not been studied. In addition, due to the continuous promotion of VAT reduction in recent years, VAT plays a more important role in the economic development of Chinese enterprises. This paper believes that it is necessary to systematically study the economic consequences of VAT reduction.

At the same time, investment has the function of allocating resources in the enterprise, and the rationality of investment decision is closely related to the enterprise value. At present, investment is an important part of the development of Chinese enterprises, especially the investment in fixed assets. Compared with non-state-owned enterprises, state-owned enterprises will get more financial support due to government intervention, and the relatively loose financing environment may make their investment behavior different from that of non-state-owned enterprises. Therefore, it is of certain theoretical and practical significance to study the investment behaviors of enterprises with different property rights under the background of VAT reduction. Based on this, this paper takes the system engineering as a sample, based on the national conditions and institutional background of China, to study whether the VAT reduction has promoted the investment of engineering enterprises.

2 THEORETICAL ANALYSIS AND RESEARCH HYPOTHESIS

2.1 The impact of VAT reduction on corporate cash flow

VAT reduction reduces the actual burden of VAT on enterprises, and reduces the cash outflow of enterprises, thus increasing the discretionary cash flow of enterprises, which in turn encourages enterprises to increase investment.

2.2 The influence of VAT reduction on enterprise investment under different property rights

The policies of individual enterprises are affected by the macro environment, and tax reform can ultimately affect the investment decisions of micro individuals through various ways. However, this role is not to be generalized, because individual enterprises make different responses to the same policy due to their different management ideas, development prospects, governance methods and other aspects. In other words, it is of significance and necessity to consider the role of property right in the relationship between tax reform and enterprise investment.

Different from western countries, China, as a socialist country, controls the vast majority of resources by the state. First of all, under the influence of the pyramid control structure, the agency conflict between large and small shareholders of an enterprise is significant, and the actual controller can obtain excess returns. Second, in terms of bank loans and supervision, most state-owned enterprises are relaxed, enabling them to have relatively strong debt financing capacity. For non-state-owned enterprises, due to the hard constraint of debt budget, they have difficulties in debt financing. When the VAT transformation increases the operating

* Corresponding author: 354795150@qq.com

cash flow of enterprises, it can be seen from the financing constraint theory that the investment of non-state-owned enterprises will show stronger sensitivity. Third, the government participates in the governance of state-owned listed companies as a major shareholder. Corporate objectives are generally related to social and public interests. Meanwhile, the administrative structure of state-owned enterprises is relatively complex and the professional manager system is not perfect, which forms agency conflicts different from non-state-owned enterprises. Therefore, in the face of tax reform, state-owned enterprises, unlike non-state-owned enterprises, timely adjust their investment strategies, promote the upgrading of industrial structure, and enhance enterprise value.

Therefore, compared with state-owned enterprises, non-state-owned enterprises are more likely to expand the scale of fixed asset investment in the context of VAT reduction. In the following part of the empirical study, this paper divides listed companies into state-owned and non-state-owned, and discusses the impact of VAT reduction on the investment behavior of enterprises with different property rights.

On the basis of the above theoretical analysis, the research hypothesis of this paper is proposed: VAT reduction will promote enterprise investment and the effect of VAT reduction on non-state-owned enterprises is stronger than that of state-owned enterprises.

3 RESEARCH DESIGN

3.1 Empirical model

Equations should be centred and should be numbered with the number on the right-hand side.

$$INV_{i,t} = \alpha + \beta_1 VAT_{i,t} + \beta_2 Size_{i,t} + \beta_3 LEV_{i,t} + \beta_4 ROA_{i,t} + \beta_5 Growth_{i,t} + \Sigma IND_{i,t} + \Sigma Year_{i,t} + \rho_i + \mu_t + \varepsilon_{i,t} \quad (1)$$

3.2 Variable definitions

Dependent variable: In the enterprise cash flow statement, "cash paid for the purchase and construction of fixed assets, intangible assets and other long-term assets" measures the newly increased fixed asset investment of the enterprise in the current period, and is standardized with "total assets at the beginning of the period", which is recorded as INV.

Independent variable: Effective VAT rate = current VAT paid/revenue.

Control variable: (1)The Size of an enterprise can indirectly influence its investment decisions through its total disposable assets, which is denoted as Size;(2) When studying the impact of tax reduction on enterprise investment, this paper controls the impact of asset-liability ratio, which is denoted as LEV;(3) The enterprise's investment decision is influenced by the enterprise's profitability. The stronger the profitability is, the better the enterprise's operation condition is, the greater its development potential is, and the stronger its purchasing and investment capacity is. Therefore, this

paper takes ROA, a measure of profitability, as one of the control variables;(4) Generally speaking, enterprises with rapid profit growth are generally in the period of investment expansion, indicating that they have a good development prospect and relatively strong investment capacity. Therefore, when studying the impact of tax reduction on enterprise investment, this paper controls the impact of net profit Growth rate, which is denoted as Growth;(5) In order to distinguish the influences of different industries and years, the variables of industry and Year were virtualized, which were recorded as IND and Year respectively.

Sample selection

3.3 Sample selection

The research period of this paper is from 2009 to 2019, and it demonstrates a-share listed companies of engineering enterprises.

3.4 Descriptive statistics

As can be seen from Table 1., the minimum value of investment scale (INV) is close to 0, the minimum value is 0.328, the mean value is 0.073 and the standard deviation is 0.086, indicating that the investment scale of each enterprise increases every year, and the investment behavior of different enterprises varies during the study period, but the difference is not significant after the standardized treatment.

Table 1. Descriptive statistics

Variable	Observations	average value	Standard deviation	minimum
INV	5280	0.07	0.086	0.037
VAT	5280	0.73	0.489	0.014
SIZE	5280	22.0	1.458	0.007
LEV	5280	0.47	0.203	0.332
ROA	5280	0.25	0.085	0.370
Growth	5280	0.84	3.342	2.198

4 EMPIRICAL TEST RESULTS AND ANALYSIS

4.1 Empirical test of research hypothesis

I present the least squares regression results of the study hypothesis in Table 2. The regression coefficient is -0.012, which means that if the effective tax rate of VAT is reduced by one unit, the investment of enterprises will increase by 1.2%, and the result is statistically significant. To some extent, this indicates that the impact of VAT reduction on enterprise investment is not only statistically significant, but also economically significant.

Table 2. EMPIRICAL TEST RESULTS

Variable	Results	State-owned enterprises	Non-state-owned enterprise
VAT	-0.012*	-0.009*	-0.021**
SIZE	0.064**	0.054**	0.074**
LEV	0.083*	0.073*	0.093*
ROA	-0.000	-0.000	-0.000
Growth	0.015	0.015	0.015
IND	Control	Control	Control
Year	Control	Control	Control
R2	0.501	0.503	0.507
N	5280	2340	2940

Note: ***, **, and * indicate significant levels of 1%, 5%, and 10%, respectively; the numbers in parentheses are t values; the calculation of t values is based on robust standard deviation; to save space, unannounced annual and industry dummy variables Regression results.

Considering the different property rights of enterprises, there are differences between state-owned enterprises and non-state-owned enterprises in enterprise goals, business philosophy, salary incentive system and other aspects. Therefore, for hypothesis 1, grouping test is carried out in this paper. The results are shown in the table above. The adjusted R2 of the samples of non-state-owned enterprises is 0.507, and the overall goodness of fit of the regression equation is relatively ideal. After controlling enterprise size, asset-liability ratio, return on assets and enterprise growth capacity, the estimated VALUE of VAT coefficient is 0.021, which is significantly correlated at the level of 5%. Moreover, the VAT coefficient of the sample of non-state-owned enterprises is greater than that of the sample of state-owned enterprises in absolute value, indicating that VAT reduction has a greater promoting effect on the investment of non-state-owned enterprises than that of state-owned enterprises.

4.2 Robustness test

Through the above statistical analysis, we can get the verified conclusion, but this conclusion may change with the change of parameter setting. In order to ensure the persuadability of the above argument, robustness test is needed. In business operation and management, management may refer to last year's industry investment when making investment decisions. Therefore, in order to ensure reliability, the post-detection method is adopted to carry out robustness test. The explanatory variables and control variables of lag phase are adopted to verify the impact on current investment.

The results of the robustness test above are basically consistent with the main research results of this paper, which further confirms the hypothesis proposed in this paper and indicates that the research conclusions of this paper are reliable.

5 CONCLUSION

For state-owned enterprises, the government, as the nominal owner, will participate in the operation and management of the company and intervene in the development strategy and operation policy of the enterprise, resulting in the differences between the government and non-state-owned enterprises in the aspects of operation objectives, organizational management, personnel appointment and incentive measures. In state-owned enterprises, on the one hand, they undertake the goals of macroeconomic development, employment promotion, social undertakings and so on. In order to avoid unnecessary risks, the management generally adopts relatively conservative strategies. Therefore, in the face of tax reform, the response of state-owned enterprises is relatively slow; On the other hand, in terms of personnel arrangement, senior managers of state-owned enterprises are usually directly appointed by their superiors, and salary promotion is generally not determined by enterprise performance, so they pay more attention to policy goals or the expectation of macro-control. However, the fixed asset investment behavior of enterprises is very uncertain. When facing the tax reform, the management of state-owned enterprises will generally take a cautious attitude. In contrast, the operating goal of non-state-owned enterprises is to maximize the interests of shareholders, and managers are highly incentivised by equity. Therefore, in the face of preferential policies, management will timely seize investment opportunities, actively make a difference for the enterprise, expand the scale of investment, and enhance the value of the enterprise.

ACKNOWLEDGMENT

First of all, I would like to thank this conference for giving me the opportunity to publish this article. Secondly, I would like to thank my tutor and colleague. Under their guidance, I successfully completed this paper.

REFERENCES.

1. Jorgenson and Hall. Capital Theory and Investment Behavior [J]. Economic Review, 1967, 53: 247—259.
2. Fama Eugene F. and Merton H. Miller. The Theory of Finance: Holt, Rinehart and Winston [J]. Journal of Finance, 1972.
3. Jensen, M. and Meckling. W. Theory of the Firm: Managerial Behavior, Agency Costs and Capital Structure [J]. Journal of Financial Economies, 1986,03:305—360.
4. Bebchuk, L.A., Stole, L.A. Do Short-Term Objectives Lead to Under-Overinvestment in Long-term Projects [J]. Journal of Finance, 1993,48:1769—1803.
5. Aggarwal, R., Samwick,A. Empire Builders and Shirkers: Investment, Firm Performance, and

- Managerial Incentives [J]. *Journal of Corporate Finance*, 2006,12:489—515.
6. Dang, VA. *Journal of Business Finance & Accounting* [J]. Leverage, Debt Maturity and Firm Investment: An Empirical Analysis.2010.
 7. Hirth, S., Uhrig-Homburg M. Investment timing, liquidity, and agency costs of debt [J]. *Journal of Corporate Finance*, 2010,16:243—258.