Testing the Hypothesis of Corporate Investment Life Cycle: The Case of Russia

Viktor Ivanov, Nadezhda Lvova, Natalia Pokrovskaia, Alexander Andrianov, and Svitlana Naumenkova

Abstract This chapter reviews the results of a study into corporate investment with reference to a current life cycle phase of an industrial enterprise. For the purposes of the study, a score-based model of corporate age evaluation was used taking into account objectives of the study and sampling specifics. The study based on Russian extraction companies reveals that massively growing companies tend to intensively raise their capital funds through loans predominantly. Once mature, they show a low-key investment activity. Aging companies lose flexibility from the perspective of effective investment instruments, reduce reinvestment, and enter stagnation.

Keywords Investments · Investment activity · Investment activity life cycle

Introduction

Deteriorating investment environment has been challenging for local business and has restrained investment activity of industrial companies. Largely, the stagnation was caused by international sanctions that increased the investment risks of local companies. Financial instability—including extreme exchange rate volatility—became an interrelated critical factor challenging not only strategic but also tactical investment planning.

Unfavorable financial environment showed through as a financial inclusion decrease, i.e., as unavailability of financial resources. Negative changes and their results (Ivanov et al. 2016, 2017; Pokrovskaia 2019) affected both stock market, which had already been hardly available for companies outside financial industry,

V. Ivanov (✉) · N. Lvova · N. Pokrovskaia · A. Andrianov
Saint Petersburg State University, Saint Petersburg, Russia
e-mail: viktor.ivanov@spbu.ru; n.lvova@spbu.ru; n.pokrovskaia@spbu.ru; alex@andrian.spb.ru

S. Naumenkova
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine
e-mail: naumenkova@knu.ua

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where CapEx is the capital expenditure (the indicator of investment activity) and FA is the fixed asset (book value, the end of the analyzed period).

One year was taken as a basic accounting period.

Next, we proceed with selecting explanatory variables. The following ones can be most relevant:

$$\mathrm{CI}t = \frac{\mathrm{FA}t}{\mathrm{TA}t} \tag{2}$$

where CI is the capital intensity and TA is the total assets (book value).

$$\mathrm{CapProd}t = \frac{\mathrm{Rev}t}{\left(\mathrm{FA}t + \mathrm{FA}\left(t-1\right)\right)/2} \tag{3}$$

where CapProd is the capital productivity and Rev. is the revenue.

Also, a lag variable of investment activity is interesting as its value will allow to conclude whether there is an investment strategy or there is none.

$$\mathrm{CapEx}\left(t-1\right) = \frac{\mathrm{FA}\left(t-1\right) - \mathrm{FA}\left(t-2\right)}{\mathrm{FA}\left(t-2\right)} \tag{4}$$

$$\mathrm{Debt}t = \frac{\mathrm{LTO}t}{\mathrm{TA}t} \tag{5}$$

where Debt is the debt burden and LTO is the long-term obligation.

The model is based on the assumption of defining significance of analyzed variables in financial and economic activity of industrial companies. There is no doubt company's cash flow value is of great interest in the context of CLC; however, the value is not always stated in companies' financial reports, what demands exclusion of the value. Thus, CapProd was evaluated through a traditional approach, i.e., based on revenue received through the accrual method. Besides, we did not use profitability values, which, in our opinion, often do not reflect actual efficiency of corporate financial and economic activity taking into account companies' shadow economy (Kireenko et al. 2017) including illegal cash-out.

In general terms, investment activity dependency model can be represented as a system of equations (this form of linear dependency is preliminary and provisional):

Once they receive higher revenue, companies do not intend to use it for capital investments as they are happy with existing assets. Additional revenue, which is closely related to the increase of retained earnings, is used for other purposes as soon as all required expenses are covered. Thus, the third hypothesis was not fully proved.

F-statistics once again proved the significance of the whole regression. Explanatory power of variables at this phase reaches its peak if compared to the previous two. This result contradicts the study (Skorokhod and Pakhtusova 2017) where authors were able to form a significant model solely for the growth phase.

Let us consider the nature of dependency of investment activity on corporate age. Empirically obtained dependency allows accepting the hypothesis four.

$$\text{CapEx}t = 0.125 + 0.199 * M1 - 0.053 * M2 \tag{10}$$

According to the obtained model, on average extraction companies invest into their own capital funds 12.5% of fixed assets' value as of the beginning of a reporting period. Besides, companies invest 19.9 percentage points more at the growth phase than at the maturity phase. Investment decreases by 5.3 percentage points at the stagnation phase if compared with the maturity phase. It is worth mentioning that model Eq. ((10) explains only 30% of changes in the investment activity.

Conclusion

Thus, as the study reveals, industrial companies tend to form capital funds during the growth stage using loans even though loan rates are extremely high during the given phase. Once mature, they show a low-key investment activity while orienting toward an established strategy, which becomes indifferent to the influence of considered factors. Aging companies lose flexibility from the perspective of effective investment instruments, reduce reinvestments, and enter stagnation. Similar results on the relationship of investment and corporate age were obtained by Faff et al. (2016) and Hasan and Cheung (2018). Hypothesis was confirmed for the emerging financial market such as Russia.

Other promising areas for studies, in our opinion, are testing the corporate investment life cycle hypothesis in other industries with reference to investment into intangible assets.

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