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# Financing innovation: two models of private equity investment

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The analysis of private equity investment impact on firms' innovation capabilities has driven abundant research since the 1980s. The main focus has been on understanding drivers of successful investments strategies in start-ups, known as strong drivers of disruptive innovation in contemporary economy (Timmons, 1986). It resulted in tailored models for selection of firms with high potential, their valuation and investment risk management (Da Rin, 2011). Meanwhile, regarding more mature firms, the studies of the impact of buy-outs on entrepreneurship have shown mixed evidence (Lerner 2011, Wright 2011, Amess 2015). Although mature firms like middle-market companies are assumed to be one of the main growth engine in most European countries, the literature on private equity lacks of models to account for innovation in investment practices. Building on innovation management literature (Le Masson 2010), this research aims at modelling the role of investors in fostering innovation among their targeted companies.

A multiple case study has been conducted in collaboration with Bpifrance, a French private equity fund aiming at supporting middle market firms' innovation capabilities. We had a unique access to contrasted deals both from investors' side (interviews, due diligences, follow-up documents), and firms' side (interviews with firm management team, patent bases) to analyse their innovation capabilities.

First, we propose a model of investors' valuation method, which proved to be more realistic with their practices. Our findings are consistent with traditional valuation theories and confirm that valuation methods are based on the assessment of firm's future cash flow resulting from its activity. However, while traditional methods rely on the sum of the present value of cash flows over an infinite period of time, we observe that investors only predict future cash flows over the limited time period of shares ownership. The key focus is thus to maximize the firm's value at the exit (i.e. end of

the ownership period).

In this respect, we characterize two different logics of private equity to maximize the exit value. Either investors intend to reach larger cash flows during the ownership period and value these existing returns at the exit, which we call a “backward valuation” method. It leads to risk reduction strategies (e.g. optimization, cost-reduction or build-ups). Or, they design an exit strategy based on an increase in firm’s potential after their ownership period, i.e. an increase in cash flows for the future buyer, which we call a “forward valuation” method.

Finally, the empirical case study, based on design theories, explore interactions between the two investment models and firm’s innovation capabilities. We show that, while a backward valuation method can be fruitful for firms that are not highly innovative, it may hinder innovation dynamics in more innovative companies. We discuss the impact of the type of private equity depending on firm innovative capabilities, and identify resulting challenges in firm’s long-term development.

Thus, this research discusses theoretical models on valuation methods and related investment practices, and their empirical impact on innovation. Managerial implications can be drawn regarding firm’s ability to value its innovation capabilities to access better funding.

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