Sluggish investments and firm heterogeneity

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1. **Introduction**

Since the last decade of the twentieth century, most advanced economies have recorded a marked stagnation in investments (Fay, Guénette, Leduc and Morel, 2017; Gutierrez and Philippon, 2017). Such trend has affected the processes of capital-embodied technological progress and plant upgrading, with negative consequences for productivity and efficiency (Sakellaris and Wilson, 2004; Cummins and Violante, 2002; Syverson, 2011). Moreover, the decline in investments appears to be dissociated from trends in other variables that, in the conventional view, are considered among the main antecedents of capital formation (Hayashi and Inoue, 1991; Levine, 1991; Blundell et al., 1992), such as profitability, liquidity, funding costs, and market values (Gutiérrez and Philippon, 2018; Diez, Fan and Villegas-Sánchez,2019). Especially in Europe, this decoupling has been particularly accentuated in the aftermath of the Great Recession, where a steady growth in manufacturing added value has been associated with flat capital investments. What are the factors beneath such decupling between investments and value creation? Is this a general trend, or there exist differences among firms?

These questions have attracted the attention of academics and policy makers. Yet, while the performance-investment decoupling is generally considered as an empirical fact – variously labelled as secular stagnation (Summers, 2015), investmentless growth (Gutiérrez and Philippon, 2016), investment weakness (Banerjee et al. 2015), investment slump (Bussiere, Ferrara, and Milovich, 2015), investment hollowing out (Alexander and Eberly, 2018) – there is still no consensus on its determinants. Some authors give emphasis to the role of frictions in capital markets, which slows down the process of capital formation (Gomes, 2001; Moyen, 2004; Hennessy and Whited, 2007). Others, stresses the limits of analysis circumscribed to physical capital, when firms have extensively raised investments in intangible resources (Peters and Taylor, 2017). Other factors associated with decreased competition, tightened governance and increased short-termism have received equally relevant attention (Gutierrez e Philippon, 2016). These explanations, however, find only partial support in the data. Moreover, by focusing primarily on aggregate macro trends, they fail to provide full account of heterogeneous patterns of investments among firms.

In this paper we add to this literature by linking capital investments to the heterogeneity of firm conducts. In particular, we provide two main contributions. First, we document that the flattening of capital formation is not so much (or at least not only) due to a lower average propensity to invest, but rather to a marked and growing heterogeneity of choices among firms. The literature on firm heterogeneity (see among others, Bartelsman and Doms, 2000; Syverson, 2004) reports wide, persistent and (sometime) diverging varieties of firm performance, even within narrowly defined industries (Landini et al., 2020). A similar pattern emerges with respect to capital investment choices. While a subset of firms is oriented towards increasing capital formation, another share of firms significantly divests. Thus, the aggregate flattening of investments turns out to follow from the combination of these different conducts, rather than being the consequence of a generalized tendency toward sluggish investment.

Based on this evidence, the second contribution of the paper is to provide an explanation for the observed heterogeneity of investment choices. To do so, we frame our analysis within a resource-based approach to the theory of the firms and exploit Penrose’s (1959) concept of *productive opportunity*. According to the latter, firm behaviour is not a simple (automatic) response to external price stimuli; rather, it depends on the personal evaluation of business opportunities (Landini et al., 2020). In this view, which has later found several applications in the management literature—e.g. subjectivist theory of entrepreneurship (Kor et al., 2007; Foss et al., 2008), managerial cognition (Helfat and Peteraf, 2015), behavioural resource-based view of the firm (Pitelis, 2007)—the external environment, markets and demand are perceptions (images) in the manager’s mind, which interact with the firm’s internal resources and capabilities to motivate and shape the direction of expansion (Pitelis, 2005). The heterogeneous nature of such perceptions, combined with the variety of resource and capabilities accumulated by firms, can provide an explanation for divergence in their propensity to invest.

Within this framework, we focus on two main explanatory factors. The first one is the diversity of corporate strategies. A consolidated stream of research relates the variety of firm’s choices observed in the present to the differentiation of strategic conducts adopted in the past (Miles and Snow, 1978 ; Parnell, Lester and Menefee, 2000; Collis and Montgomery, 2008). Strategic profiles impact on the accumulation of skills and resources, which in turn affects firm’s performance (Ben-Menahem et al, 2013; Arrighetti et al., 2015). Furthermore, in contexts of high uncertainty, the heterogeneity of strategic conducts is further strengthened by the different perception of the competitive environment (Coriat, 2001) as well as by the firm-specific reaction capabilities (Archibugi et al., 2013; Landini et al., 2020). On this ground, we argue that the observed heterogeneity in patterns of investments can be linked to the stream of resources that firms accumulate as a result of their corporate strategies. These resources impacts on the firms’ perception of the competitive environment and thus affect their investment decisions. Firms that base their corporate strategies on gaining advantages in the low cost of inputs (both capital and labour) have relatively little incentives to undertake expensive programs of technological upgrading and are thus expected to have low propensity to invest. On the contrary, firms relying on strategies oriented towards product upgrading, innovation and market extension, ground their competitiveness on the quality and efficiency of their productions and are thus pushed to adopt a proactive investment policy.

Alongside corporate strategies, the second driver of investment decisions that we consider concerns managers' discretion. In fact, while it is certainly the case that past histories of resource accumulation directs firms along a specific pattern of capital formation, managers maintain some degree of freedom in deciding how to allocate financial resources. This is true especially in the presence of recessions, which cerate highly perturbed and hostile business environment (Cefis and Marsili, 2019, Bartoloni et al., 2020). In the latter, the high degree of uncertainty (Bloom, 2004) and volatility of market signals (Al-Suwailem, 2014) as well as the fragmentation of buyer-supplier relationships (Baldwin 2009; Accetturo and Giunta, 2019), make more difficult for firms to sustain their usual competitive advantages and thus rise the relevance of idiosyncratic managerial decisions (ref.). In their seminal contribution, Lazonick and O'Sullivan (2000) frame such decisions in terms of two alternatives: on the one hand firms can decide to '*retain and reinvest'* corporate earnings inside the company with aim of sustaining growth and resource accumulation; on the other they may lean towards '*downsize and distribute*', which implies the compression of economic activities and the transfer of liquid assets outside the company, mainly to feed owners' pay-outs. While this dichotomy has been the hallmark of the transition from the manufacturing-based Fordist organization, to the finance-based post-Fordist corporation, it tends to be exacerbated in the context of a recession. The high degree of uncertainty and opacity that surrounds business relationships, can push the allocation of liquid assets in opposite directions, with direct consequences for the heterogeneity of investments.

We test these hypotheses using a large dataset of Italian manufacturing firms with detailed information about internal characteristics and performance observed both before and after the Great Recession (i.e. 2004–2018). We measure investments by relaying on the by-now standard approach based on the identification of *investment spikes* (ref. Grazzi, Disney et al., 2020 -Economica). The fact the process of capital formation is characterized by lumpiness, i.e. prolonged periods of low or zero investments punctuated by large discrete changes, is well established in the literature (Doms and Dunne 1998; Cooper and Haltiwanger 1993, 2006; Caballero 1999; Cooper et al. 1999; Nilsen and Schiantarelli 2003 in Economica). While most of these contributions link such lumpiness to structural factors such as non-convex capital adjustment costs (such as fixed costs) and indivisibility of investment projects, we focus on the role of firm-specific resources and capabilities. In particular, we relate investment spikes observed during the Great Recessions to firm's characteristics before the crisis as well as to proxies of firm's reactions during the first years of the downturn. Overall, the results of our empirical analysis provide strong supports for our hypotheses: after controlling for contextual and firm-specific structural, financial and demographic variables, corporate strategies and managerial discretion in the allocation of liquid assets explain large part of the heterogeneity in investment decision during the recession. These results are robust to a wide range of alternative specifications, including the split of the sample for firms of different size and age as well as panel estimates exploiting temporal variation within firms.

Conclusion

a) The propensity to invest is markedly uneven among companies and this is evident already during the early stages of the recession. Contrary to what is claimed in some contributions (Hall et al., 1995 ; Caballero and Hammour, 1996 ; Gomes et al., 2001), recession does not significantly reduce the heterogeneity within the firms. In fact, some firms appear to have invested a lot and others have divested in an equally significant way. The contained variation in capital formation therefore appears to be the result, not of a uniformly modest average propensity to invest, but of the existence of two significantly divergent behaviors among firms.

b) Controlling for structural, financial and demographic variables, the diversity of behaviors seems to be linked to the strategic choices developed by firms before the recession. The recession has emphasized the proactive orientation and propensity to invest of some companies, on the one hand, while, on the other, downturn has promoted the defensive choices and reluctance to invest of others;

c) Finally, it emerges that investment is heavily dependent on the discretion of the owners / managers concerning the allocation of financial resources and the different reactions towards the recession. The greater (lower) the propensity for a high payout, the lower (greater) the 'retained' cash flow, the more (less) the defensive and conservative choices are prevalent, the lower (higher) the level of investment.

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