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A Note on the "Little Giant" Policy

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Abstract

In this note, we briefly address the "Little Giant" Policy both in theoretical and empirical terms. As our discussion shows, the farsightedness of the Chinese LGP has both empirical support and theoretical soundness. Surely, it is an example to imitate for countries having a large number of innovative small and medium-sized enterprises.

Keywords: Small and Medium-Sized Enterprises, Industrial Policy, Innovation, "Little Giant" Policy.

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1. INTRODUCTION

In many countries of the world, small and medium-sized enterprises (SMEs) are key drivers of technological change and economic growth [1]. In particular, SMEs play an increasing role in innovation processes thanks to the opportunities offered to them by automation technologies [2]. The Chinese "Little Giant" policy (LGP), implemented since 2018, is exactly focused on specialized, refined and innovative SMEs operating in high-tech and manufacturing sectors. The main aims of such a policy are to support, to cultivate and to promote the competitiveness of "little giants", thus creating solid foundations for millions of innovative SMEs [3]. At the end of 2022, The Chinese government had supported more than 60.000 of these "little giants".

In this note, we briefly address the LGP both in theoretical and empirical terms. On the one hand, by using the set-up proposed by Philippe Aghion and colleagues for analyzing how industrial policy affects innovation rates [4], we discuss how the LGP can alter industrial sectors' equilibria. On the other hand, we present early empirical findings on the LGP to corroborate what the theoretical model predicts.

The remaining of this paper is organized as follows. In the next section, we out sketch a simplified version of Aghion et al. (2015)'s model from grasping some insights on LGP effects. In section 3, we review some results of the empirical literature on the LGP. The last section briefly concludes.

2. LITTLE GIANT POLICY: THEORY

The Chinese path of economic development provides an extraordinary case study on industrial policy [5]. During the 80s, even because of its communist heritage, China was a champion of protectionist policies inspired by the "infant industry argument" (on the argument see [6]). Afterwards, between 1998 and 2007, China pursued a policy of subsidization to big firms for sustaining their innovation capabilities and contrasting the so-called "escaping competition effect" (see [4]). Finally, in recent times, we have the LGP.

Aghion et al. (2015)'s model is fruitful to unfold main effects of policies like the "Little Giant" one; thus, we provide below a simplified version of it.

2.1 The Model

Suppose to have an industrial sector composed by two goods markets ($j=A,B$). On the demand side, a representative consumer maximizes a log-additive utility function and his/her demands for the two goods are $p_j=E/x_j$ where p indicates the price, x the quantity and E the share of income devoted to good j. On the supply side, there are two big price-maker firms ($i=1,2$) and a competitive fringe of small firms (f). The latter operates in both markets, while firms 1 and 2 can decide between being active in different markets (i.e., *diversify*; for example, 1 in A and 2 in B) or *focusing* on the more advanced market, say A (i.e., *focus*; now both 1 and 2 operate in A). Production occurs at constant marginal costs for all producers

with the fringe having a cost disadvantage with respect to firms 1 and 2, that is: $1>c_f>c_i=c$.

Each firm *i* can be a potential innovator in both markets. In the case of successful innovation, that can happen with probability $q>0$, marginal costs are reduced to c/γ_j where $\gamma>0$ denotes the efficiency gain due to innovation. Innovation effort costs are quadratic, and given by $1/2\ q^2$. Market competition is as follows: (a) in both markets firms compete in prices; (b) if firms i focus on the same market, and they cannot collude (with $\varphi>0$ denoting the probability of collusion), Bertrand competition yields to zero profits for each firm; (c) if firm *i* faces the competitive fringe (i.e., diversify) Bertrand competition makes c_f the limit price of *i*. Finally, the government can decide to intervene or not in the industry by using taxes on profits (t_A,t_B). If $t_A=t_B=0$, we have the "laisser-faire" case; otherwise, $\tau=(1-t_A)/(1-t_B)$ measures the taxation asymmetry between markets A and B.

Consistently with the above set-up, firm i's overall expected profits are given by:

$$\pi_i^D = \frac{1-t}{2}\left(\pi_i^{DI} + \pi_i^{DN}\right) = (1-t)\pi_i^D(\gamma, c, c_f, \varphi)$$

$$\pi_i^F = \frac{1-t}{2}\left(\pi_i^{FI} + \pi_i^{FN}\right) = (1-t)\pi_i^F(\gamma, c, c_f, \varphi)$$

In the above expressions, *DI* indicates successful innovation in the case of diversification, *DN* no innovation with diversification, and *FI* and *FN* have the same meaning with reference to the focalization strategy. As Aghion et al. (2015) show, increasing τ makes potential innovators less likely to diversify for escaping competition. If the probability of collusion is sufficiently small, an active industrial policy, based on taxes and subsidies, will increase innovation rates, profits and GDP levels with respect to a "laisser-faire" scenario. Hence, a well-managed industrial policy can improve productivity growth.

2.2 The little giants

The easiest way to use the above framework for addressing the LGP case is supposing that the fringe is composed by SMEs and that the policy reduces their marginal costs (i.e., $dc_f<0$). By deriving equilibrium values of above expected profits with respect to c_f (see [4] in the mathematical appendix for the expressions to be derived), we can distinguish two possibilities: (i) $1>c_f+dc_f>c$; (ii) $1>c\geq c_f+dc_f$. In the first case, "*to make the fringe more cost efficient*" increases the likelihood of an industrial configuration in which firms *i* diversify (e.g., $\frac{\partial \pi_i^D}{\partial c_f} > 0$ and $\frac{\partial \pi_i^F}{\partial c_f} < 0$), and reduces their price margins. In the second one, in order to survive firms *i* must be innovators: only successful innovators will be in competition with the fringe; big firms unable to innovate will be driven out from the industry. At regard of cost efficiency of SMEs, some recent empirical findings explain which main benefits of the LGP are.

3. LITTLE GIANT POLICY: EARLY EMPIRICAL EVIDENCE

Some very recent studies use a staggered difference-in-differences model to estimate the impact of the LGP on selected Chinese SMEs (see [7] and [8]). In these papers the estimation equation is as follows:

$$Y_{it}=b_0+b_1\ Giant_{it}+aX_{it}+\varepsilon_{it}$$

In the above expression, $Giant_{it}$ is the core explanatory variable taking the value of 1 if the firm is a "little giant", 0 otherwise; X indicates a series of control variables and ε is a residual term.

By using data from A-share listed companies spanning from 2018 to 2022, authors focus on SMEs innovation rates (i.e., $Y_{it}=Inn_{it}$) and SMEs supply chain concentration level (i.e., $Y_{it}=Conc_{it}$). Their results indicate that, in both cases, the LGP has positive and significant effects on the dependent variables.

In short, thanks to the policy, SMEs become more innovative and cost efficient because of supply chain improvements, governmental subsidies, and the alleviation of financial constraints. Thus, as a result, there are more innovative and resilient SMEs that can better support market stability and economic growth.

4. CONCLUSION

SMEs account for more than 50 percent of employment worldwide. In developing countries, their contribution to GDP can reach 40 percent and, in many emerging economies, they are key suppliers of big corporations. A similar picture well represents the industrial condition of some western countries, like Italy.

As we have discussed in this note, the farsightedness of the Chinese LGP has both empirical support and theoretical soundness. It can alter industrial equilibria, force big firms to innovate, and make SMEs more resilient. Surely, it is an example to imitate for countries having a large number of innovative small and medium-sized enterprises.

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