developed by Almeida and Wolfenzon (2006) and Lechner and Leyronas (2009) regarding the advantages of a business group structure in attracting external resources.

THEORETICAL BACKGROUND

Business Growth in Strategy and Entrepreneurship

Ever since Penrose (1959) pioneering work firm growth has been one of the central themes in the strategic management research. Prior research has extensively explored different growth strategies companies can pursue as well as their relative advantages. Companies can diversify their business to redeploy their valuable resources or stick to their main market to leverage their core competence (Prahalad and Hamel 1990). Firms can either enter new markets organically through internal development or acquire a firm that is already established depending on the firm's set of resources and capabilities (Lieberman and Lee 2009). Most of these theories have studied firm growth through an organization-level perspective with a focus on large multi-divisional companies. In the context of entrepreneurial and small businesses, however, the growth strategy is an individual-level decision made by the founder in which personal preferences play a significant role. Related to this, founders often show quite different attitudes when considering growing their business (Wiklund , Davidsson and Delmar 2003). Some entrepreneurs may not be willing to grow their business because they expect less control and more problems with a bigger company, while others may keep expanding the same company.

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Despite the different way small businesses are organized in comparison to large corporations, extant studies have paid little attention to growth strategies available for entrepreneurs, and instead, treated business growth as a unitary concept that only takes place at the company level (Sarasvathy et al. 2013). A lack of theoretical and empirical knowledge on when and how entrepreneurs form business groups (Iacobucci and Rosa 2010) is quite surprising considering that owning more than one business is quite common in the small business sector. To address this

increases the number of one-company entrepreneurs who decide not to involve partners. On the other side, it reduces the amount of external resources a requested by the entrepreneur in case of both partnership and business group. The reduction in a, however, is larger for the partnership category than the business group one. In sum, these two combined effects reduce the average business size of entrepreneurs with one company. Mathematically, we can show that the difference between *Groups* and *OneCompany* decreases as we add more partners with high *p* (we increase the upper bound of the *p* distribution *U*):

$$(13)\ \frac{d(Average\ Size\ Group - \ Average\ Size\ OneCompany)}{dU}$$

$$= -\frac{bz\ (b^2U(2p^l + U) - 2bU + 1)}{(2b(p^l + U) - 1)^2}$$

Thus[3], we propose:

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Proposition 1: *In environments characterized by high partner risk (many partners with low[4] p), entrepreneurs that grow their business as a business group reach a larger average size in comparison to entrepreneurs that grow their business as a single company.*

Proposition 2: *The relationship outlined in Proposition 1 is explained by a larger amount of external resources that business group entrepreneurs can collect. Without this resource collection mechanism, the relative advantage of business group entrepreneurs to one-company entrepreneurs disappears.*

In our framework entrepreneurs seek external resources when their personal resources k are not enough to sustain business growth. In the real world, however, entrepreneurs can secure

[3] Equation (13) is always negative.
[4] Another way to model a low p environment is to assume a *f(p)* distribution skewed to the left.

external partners" as the *presence of equity partners* in the company. Following our definition of entrepreneur and business group, equity partners cannot own more than 50% shares in the company.

Another confounding factor could be diversification. Entrepreneurs might create two different companies simply because they perform totally different activities. Thus, we decided to exclude new companies belonging to sectors (2 digits NACE code) that are different from the sector of the initial firm as part of the group. In other words, according to our definition, the only difference between group growth and company growth is that the former includes forming a different organizational structure. All the companies in the group belong to the same sector[11]. Finally, it is worth to remark that we do not consider companies owned by other companies (subsidiaries) as part of the group. Indeed, creating a holding pyramid might be motivated by tax benefits or other legal issues (Bebchuk, Kraakman and Triantis 2000). Business groups that do not fall in the defined category are not considered in the analysis.

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Because of matching, the entrepreneurs who decide to grow their business as a single entity have the same initial characteristics of the entrepreneurs who opt for the group growth (*Business Group*). Likewise, their starting business in 2003 have the same size, first-year growth rate, sector and location. As a result of a strict definition of business group the number of business group entrepreneurs is relatively small: out of 1133 entrepreneurs, only 4% opted for group growth. We relax the previous definition of business group to test the sensitivity of our results in the robustness checks section. Depending on the definition, the share of business group entrepreneurs ranges from 4% to 12%, while the key findings remain unchanged.

[11] As a robustness check, we run the analysis without considering such limitation. The key results remain the same.

is relatively weaker. Without reliable legal protection entrepreneurs and external resource providers are more vulnerable to opportunistic behaviors. Also in this context, the benefit of an organizational and legal separation between entrepreneurial initiatives is more valuable.

Controls

To test Proposition 3, we control for the lagged business growth rate and year dummies. The variable *Growth* has a value equal to 1 if the company or business group displays a positive growth rate in the previous period ($logRevenue_{t-1} - logRevenues_{t-2} > 0$) and 0 otherwise.

RESULTS

Table 2 displays the descriptive statistics of all the variables used in this study. Table 3 reports the results of the matching process. The results suggest that the initial companies of one-company and business group entrepreneurs do not differ in terms of revenue, first-year growth rate, equity, region or sector in the first year (2003). The same is true for entrepreneurs' demographic characteristics like age.

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Insert Tables 2 and 3 about here
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Proposition 1 Main Results. We use an OLS regression to test this proposition. Results are represented in Table 4. After 6 years from the foundation, the average business size of entrepreneurs who grow their business as a group of separate companies is larger both in terms of equity and revenue that one company entrepreneurs. Our findings show that business groups are about 4 times bigger than standalone companies. Tables 5 and 6 provide the results of the cox models to estimate the time to obtain 1 million in revenue or equity, while table 7 shows a visual representation of the results. These results provide strong evidence that business group entrepreneurs grow faster in comparison to single company entrepreneurs. In each year, a business

group entrepreneur is at least twice more likely (100%) to hit the 1 million revenue/equity threshold.

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Insert Tables 4, 5, 6 and 7 about here
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Next, we delve deeper into the theoretical mechanism to explain the faster growth of business group entrepreneurs. Results provided in Tables 8 and 9 support the moderating role of *Contentiousness* and *Trials Length* on business group size. *Contentiousness* has no significant direct effect on the size of companies, while it is a powerful moderator of the relationship between business group structure and size. The interaction term is significant even if we control for the city fixed effect (Model 3). *Trials Length* has a negative direct effect on size, however, it positively moderates the relationship between business group growth and size. Also in this case, the interaction term is significant even if we control for the city fixed effects (Model 3). These findings lend support to Proposition 1.

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Insert Tables 8 and 9 about here
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Proposition 2 Main Results. Our theory suggests that a business group structure facilitates involving external partners in the business, which in turn helps entrepreneurs grow faster than one-company entrepreneurs. This reasoning implies that without involving external partners, forming a business group *per se* shouldn't have any effect on size or growth rate. We test this proposition by limiting the sample to business groups in which the entrepreneur owns 100% of the shares in the marginal company. In this case, by definition, creating a business group is not associated with involving external resource providers. Table 10 reports the results of the OLS regressions. The results show that creating a business group does not have any effect on total business size as long as external partners are not involved. These findings provide evidence in favor of the proposed

group) have the same size at the end of the 10th year. These results suggest that even controlling for end-of-period business size, business group entrepreneurs reach a given target size faster than one-company entrepreneurs. Thanks to the matching at the end of the period, the same shares of single-company and group entrepreneurs reach the target size, effectively controlling for heterogeneous growth orientations.

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Insert Table 12 about here
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Replication. As a robustness check, we repeated the analysis with a different sample of 4,000 Italian entrepreneurs. This time, all the companies were founded in 2008 instead of 2003. The key results of our analysis remain the same[14].

Diversified Groups. In this paper, we adopted a strict definition of a business group in order to rule out potential confounding effects like business diversification. In the previous definition, we excluded companies belonging to sectors that are different from the sector of the original firm. As a robustness check, we repeated the above analysis relaxing this previous definition of a business group. More specifically, we considered any new business founded by the same entrepreneur as part of the group independently of the sector. In a similar vein, we reduced the ownership stake needed to consider a business as part of a group from 50% to 20%. These modifications increase the number of business group entrepreneurs in the sample and slightly change the magnitude of the regression coefficients, while the key findings remain unchanged[15].

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[14] Results available upon request.
[15] Results available upon request.