The transmission of credit risk within multinational business groups

Stefano Cascino and **Maria Correia** investigate default contagion within business groups

The importance of multinational business groups in the contemporary world economy is striking. About half of the world gross domestic product stems from foreign affiliates of business groups. Yet, little is known about how the interdependencies among group firms shape managerial decisions and the transmission of risk within groups.

Understanding the extent to which risk in general, and credit risk in particular, may be systemic to business groups is of paramount importance. Group bankruptcies tend to be large (e.g. Global Crossing, Maxwell, MG Rover, Parmalat), complex, and affect a significant number of stakeholders, often in multiple jurisdictions. Therefore, gauging the effects of group-affiliated firms' credit risk on group-wide financial health and assessing how business group information may be used to improve existing credit-risk models are important endeavours.

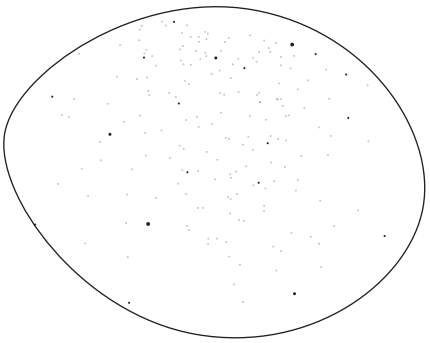
Credit risk, that is, the probability of financial default, affects firm value and the distribution of payouts to different stakeholders. Furthermore, while bankruptcy is a rare event, the costs associated with failing to predict default are substantial. Accordingly, academics and practitioners have devoted substantial attention to the prediction of firm default. Efforts to formally assess credit risk date back to the late 19th century, and currently involve the use of financial statement information, or a combination of financial statement and market price information in an unstructured or structured fashion.

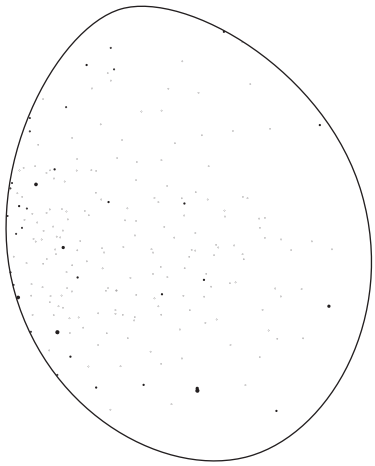
An important raison d'être of business groups is that ultimate owners can exert control over a large number of companies while containing their risk exposure to different parts of the business through limited liability. Unlike divisions of conglomerates in fact, business group subsidiaries are separate legal entities that can individually file for bankruptcy. Also, unlike conglomerates which have to absorb all of their divisions' losses to prevent their own bankruptcy, business groups because of their limited liability protection, may deliberately decide not to bail out distressed subsidiaries. Under the general principle of limited liability, business group parent firms cannot be held responsible for the obligations of their subsidiaries, and they may decide not to support a distressed subsidiary when this is too costly for the group. A business group may be required to support its financially distressed subsidiaries as a result of explicit or implicit agreements such as guarantees and comfort letters. In the absence of these agreements, a business group's decision to support a subsidiary depends on whether the expected costs of subsidiary bankruptcy outweigh the costs of offering support. The costs of subsidiary bankruptcy may include operational disruption, reputational damage, and default. Most importantly, in several countries, bankruptcy courts may rule to lift a parent's limited liability protection – so called veil piercing – and hold the parent firm responsible for its subsidiaries' obligations. As a result, the default of a subsidiary can impose non-trivial costs on the parent firm (among others: operational disruption, limited access to external capital, reputational loss). This, in turn, can generate a cascade of defaults within a group as in the case of cross-default clauses. Because of these costs and the possibility of veil piercing, parent firms may choose to support their financially distressed subsidiaries.

In two recent studies, we seek to understand how the failure of individual group-affiliated firms affects group-wide credit risk and how granular within-group financial information can be used to better forecast future bankruptcy events.

In Beaver et al. (2018a), we examine how corporate failure unfolds within business groups. Using a large cross-country sample of group-affiliated firms, we show that, by reallocating resources within the corporate structure, business groups actively manage intra-group credit risk to prevent costly within-group insolvencies. We find that large and diversified groups are more effective at insulating their subsidiaries from credit-risk shocks. Moreover, the pattern of capital reallocation appears consistent with groups supporting subsidiaries that are easier to monitor and whose insolvencies may spill over to other group firms. Finally, we document that recent regulatory changes related to the approval and disclosure of related-party transactions may limit groups' ability to shield their subsidiaries from credit-risk shocks.

In Beaver et al. (2018b), we propose a simple adjustment to traditionally used credit-risk models that can significantly improve their ability to predict the default of group-affiliated firms. We show that granular subsidiary financial information has incremental predictive power in consolidated group financial statements for parent default, especially when the financial reporting transparency of the parent-country is low and therefore the parent's consolidated statements are expected to be of lower quality. We further show that the predictive power of subsidiary bankruptcy models can be improved by including parent and other group-firms' financial information. To put the results of our study in context, one can think of parents as potential resources (obligations) for subsidiaries and, likewise, subsidiaries as potential obligations (resources) for parents. From a financial reporting perspective, these





resources and obligations represent off-balance sheet assets and liabilities in their respective financial statements, causing the 'true' firm leverage to be different from 'reported' leverage. Specifically, we find that a 1% increase (decrease) in parent default probability produces the same effect on subsidiary default probability as a 1.32% increase (decrease) in subsidiary leverage. This effect is higher for tightly controlled subsidiaries and subsidiaries with interlocked boards.

While these two studies focus on the transmission of credit risk, we believe understanding how other risks, including the risk of opportunistic earnings management (Beuselinck et al., 2018), propagate within the group is also of crucial importance to regulators, auditors, and financial intermediaries.

In conclusion, it is time to invest to improve the mapping of group structures and to look beyond the legal form boundaries of individual group-affiliated firms to unpack their interdependencies and better gauge their systemic risk implications.

REFERENCES

Beaver, W., Cascino, S., Correia, M. and McNichols, M. (2018a). Bankruptcy in groups. London School of Economics Systemic Risk Center Discussion Paper No 81.

Beaver, W., Cascino, S., Correia, M.and McNichols, M. (2018b). 'Group affiliation and default prediction', Management Science (forthcoming).

Beuselinck, C., Cascino, S., Deloof, M. and Vanstraelen, A. (2018). 'Earnings management within multinational corporations', Accounting Review (forthcoming).

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