Referee Report on manuscript 1106-1

The Inner Structure of Pyramid and capital structure: Evidence from China

Summary

The paper analysed the relationship between capital structure and the pyramidal structure of listed Chinese companies. The main result is that the length of the vertical structure of the pyramid does affect the amount of debt: more layers in the pyramid result in higher debt. However, the horizontal structure does not influence the capital structure. Finally, the author(s) show(s) that the environment in which the firm operates is an important mitigating factor and the effect of the vertical structure is smaller in regions with better institutional environments.

Overall Impression

The paper presents some interesting results. However, in my opinion the discussion is poorly done and does not indicate what is the novel content of the study. The empirical evidence presented by the author(s) confirms several theoretical and empirical studies on the distortion of pyramid firms, a common organization in Asian companies. Previous studies have focused on the impact of the wedge between control and cash flow rights of the controlling shareholder in pyramid firms, showing that risk of expropriation and distortions increase as we move down the pyramid because of increased wedge between control and cash flow rights (see for example the theoretical model by Bebchuck, Kraakman and Triantis NBER Working Paper 6951).

The authors, instead, do not consider the ownership and focus only on the pyramid structure. However, they do not discuss this choice (did they disregard information on ownership structure on purpose or no information is available?) and do not contrast their results with previous studies. Are the authors suggesting that their results can be interpreted as evidence that pyramid structure *per se* influences the capital structure, independently of the ratio between control and cash flow rights? They should clarify what is the contribution of their analysis.

The capital structure seems to be sensitive to institutional frameworks and to the overall corporate governance system in which firms operate as indicated by the interactions with marketization degree, government intervention and law environment.

Thus, I believe that the paper has some potentially interesting findings but more work has to be done to present them in a proper way. In my opinion, the paper could increase its original contribution by analyzing more in detail the role of corporate governance system.

I have a few comments along these lines:

1. The mitigating effect of marketization degree, government intervention and law environment suggests that a better institutional environment limits the discretionary power of controlling shareholder. The authors run three distinct regressions with interactions terms between LLAY/SLAY and marketization degree, government intervention and law environment respectively. Can the authors say something on the relationship between these three institutional variables? Are they substitutes or complements? In other words, do they reinforce each other or do they play the same role? For example, is marketization degree a substitute for law environment? What if two or three institutional variables are in the same regression? Or what about defining a new composite index obtained by the 3 institutional variables ?

2. The authors do not provide any possible explanation for the negative result on the horizontal chain structure. Do they have any suggestion on this issue, i.e. why the horizontal dimension does not affect the capital structure? Most of the literature has focused on vertical structures but also cross ownership and other arrangements within business groups may lead to distortions (although business groups may have well-developed internal capital markets and this in turn may have a positive effect).
3. Firms belonging to a group may have more financial resources than independent firms (several papers have demonstrated the existence of). Can the author(s) add some information on this?

General Expositional Point:

- The paper would greatly benefit from a more accurate discussion of the corporate governance environment in which firms operate, and of the differences among regions.
- Tables should be thoroughly described and explained in the legend.
- Table 1 should report the definition/description of all variables. Other studies may be referred to for a more detailed analysis. However the paper should contain the definition of all variable used.
- There are few typos and errors that should be fixed.