

Report Type: Mid Term Award Report

Full Name:

Prof. Bart Lambrecht (award holder)

Dr Shiqi Chen (co-investigator)

Project Title: The dynamics of corporate financial policies, group decisions, and coalition formation.

Project Start Date: Mon, 01/02/2021

Project End Date: Mon, 30/09/2024

Project Abstract:

This research studies the dynamics of the three main corporate policies: the investment, financing and payout decisions. We first study how these decisions interact, and whether the theories of corporate capital structure and payout can be reconciled with each other given these interactions. Next, we study investment and payout decisions made by a group of investors, such as a partnership. We examine the formation, composition, organizational and legal structure of the decision-making coalitions.

Traditionally, the finance literature has studied the firm's three main financial policies in isolation. However, in reality these three key corporate decisions are not independent as they are linked by the firm's sources and uses of funds constraint. The interdependencies between the firm's policies raise many questions that have not been recognized in the existing literature. For example, if we believe that firms follow a target leverage ratio, what are the implications for the dynamics of payout and investment? Alternatively, what are the implications for payout and investment if firms follow a pecking order policy? Our research aims to explore these questions from a theoretical perspective, with a view to produce empirical predictions as to how payout, investment and capital interact.

In the second project, we study partnerships. In particular, we examine how the partners' personal liability, their sharing rule, personal taxes, and capital constraints determine the partnership's optimal size, financing, and investment decisions, and the partners' optimal degree of personal liability.

### Activities and Achievement:

We have concluded our first project, which has been published in the Annual Review of Financial Economics (vol.13, November, 2021). The paper titled "Do capital structure models square with the dynamics of payout?" is available at <https://www.annualreviews.org/doi/abs/10.1146/annurev-financial-010421-085556>.

Our second project, titled "The optimal size, financing and liability of partnerships", focuses on partnerships, which make up approximately 10% of UK businesses. Despite their prevalence, there is a lack of research on the financing of partnerships. Our project aims to fill this gap by examining the optimal financial decisions of partnerships.

We have completed the first draft of the paper. The paper was presented in the 19th UBC Summer Conference by Prof Bart Lambrecht on 29th July 2023. Prof Bart Lambrecht will also present this paper in the 10th Annual Corporate Finance Conference and Cambridge – Nova Workshop in September 2023.

Partnerships are very different from corporations. In particular, partnerships are composed of partners who own and control the firm, unlike public corporations, where management is often separated from ownership. This means that partners' human capital is vital for the partnership's operation, like what we observe in law firms, consultant firms, medical practices etc. All partners together share the profits and liabilities equally by default. Therefore, partnerships tend to optimize with respect to value per partner rather than total firm value. Additionally, general partnerships are subject to unlimited liability, meaning that partners are liable for all partnership debt with their personal assets. However, partners can limit their liability by choosing the amount of personal assets pledge to the firm, either by setting up a limited liability partnership or transferring their personal assets to a trust or a family member. The chosen personal liability level in term affects the partnership's debt capacity and cost of borrowing. Therefore, partners need to determine the exposure of their personal assets to the partnership operation in conjunction with the firm's financial policies.

The model shows that the optimal debt level, degree of liability and partnership size are interrelated and depend on the degree of financing constraint. When partners are not financially constrained, the optimal debt level is always safe, and the optimal partnership size is always below the efficient level. Enlarging the partnership size increases the total value of the firm, but it dilutes the value per partner, making the partners reluctant

to increase the number of partners. However, competition that reduces the output price can enforce the efficient size for a partnership with deep pockets.

When partners are financially constrained, exposing personal assets to the partnership is optimal if it allows the partnership to keep debt safe, thereby avoiding costly bankruptcy upon closure. In addition, pledging personal assets allow the firm to expand its debt capacity and to borrow safe for higher degree of financing constraint. For a severely capital-constrained partnership that need to adopt risky debt, a limited liability partnership that ringfences the partners' personal assets from the partnership is optimal. Costly bankruptcy therefore creates a link between the optimal size and the optimal debt level when the partnership is financially constrained.

We find that there is a pecking order of partnership financing – partners find it optimal to use inside equity first and cover the residual need by debt. More specifically, partnerships can raise more funding by increasing the number of partners, by raising more debt or by a combination of the two. In fact, each of these three strategies can be optimal, but for different degree of financing constraint. Increasing the partnership size raises more equity capital and potentially enlarges the pool of personal assets the partnership's creditors have a claim on, thereby increasing the debt capacity of the partnership. This is preferred by the partnership if bankruptcy costs are high and the capital constraint is tight. Higher bankruptcy cost and a tighter capital constraint, together with market competition can lead to inefficiently large partnerships and late investment. In this case, another business structure such as corporation might be more suitable for capital intensive firms.

Building on this paper, we are now working on another new project on partnership industrial dynamics. In particular, instead of assuming homogeneous human capital, we take into account the fact that human capital is heterogenous and partners' productivity varies. The project focuses on the entry and exit of partnerships when they are competing for productive partners. Partners are willing to join a partnership to share the fixed cost. However, productive partnerships are reluctant to expand, except when the output price drops, as expansion by taking on lower ability partners decreases the average productivity. The model further studies how the distribution of partners across different partnerships changes when the market price changes, and the corresponding implication on the dynamics of partnerships in the industry.

In summary, our first project has been successfully concluded, and the second project is ongoing with a complete first draft. With the support of the CERF grant, we have developed a research pipeline on professional partnerships and initiated a new project on partnership dynamics.

#### Dissemination:

The first paper is published at the Annual Review of Financial Economics (vol.13 Nov, 2021). The printed version is available on the ARFE website. The pre-print paper version is available on SSRN. The paper is also available as CEPR discussion paper DP16199.

During the past academic year, joint research was presented by Bart Lambrecht at the 19th UBC Summer Conference (29/07/2023) and Cambridge-Nova workshop (24/9/2022), and in seminars (in person) at Humboldt University, School of Business and Economics (Berlin, 17/11/2022) and (in person) at the Collegio Carlo Alberto, University of Turin (Turin, Italy, 22/3/2023), and by Shiqi Chen at the Northern Finance Association Annual Meeting (Banff, 27/09/2022, in person).

The following conference presentations are also scheduled: 10th Annual Corporate Finance Conference (14/09/2023) and Cambridge – Nova Workshop (29/09/2023).

#### Outputs:

Do Capital Structure Models Square with the Dynamics of Payout?

Shiqi Chen and Bart M. Lambrecht

Annual Review of Financial Economics 2021 13:1, 271-299

ARFE:

<http://www.annualreviews.org/eprint/QHPiGMHME6TBACVJ2K7V/full/10.1146/annurev-financial-010421-085556>

SSRN: <https://ssrn.com/abstract=3854109> or

<http://dx.doi.org/10.2139/ssrn.3854109>

Major Difficulties and Any Other Issues: none

Web Links:

Do Capital Structure Models Square with the Dynamics of Payout?

Shiqi Chen and Bart M. Lambrecht

Annual Review of Financial Economics 2021 13:1, 271-299

ARFE:

<http://www.annualreviews.org/eprint/QHPIGMHME6TBACVJ2K7V/full/10.1146/annurev-financial-010421-085556>

SSRN: <https://ssrn.com/abstract=3854109> or

<http://dx.doi.org/10.2139/ssrn.3854109>

Optional - detailed findings and output:

Additional Information:

Declaration: Details of relevant outputs of this award have been submitted to the CERF Database and details of any ensuing outputs will be submitted in due course.

Signature - Main Award Holder: Signature - Main Award Holder.