J. Finan. Intermediation 18 (2009) 491–494

Contents lists available at ScienceDirect

J. Finan. Intermediation

journal homepage: www.elsevier.com/locate/jfi

Introduction

Special issue: Financial contracting: Theory and evidence

In April 2007, the *Journal of Financial Intermediation*, the University of Mannheim, and the European Corporate Governance Institute organized a conference on financial contracting at the University of Mannheim (Germany). This conference was generously funded by the German National Science Foundation (DFG) through the Special Research Center SFB 504 at Mannheim University.

The conference attracted more than 100 submissions out of which 10 were selected for presentation in Mannheim. A total of 14 papers were submitted for editorial review at the *Journal of Financial Intermediation*. All of these 14 submissions were subjected to the journal's usual double-blind refereeing procedure and six submissions were eventually selected for publication. They are collected in this special issue. These papers provide a nice mix of topics, ranging from banking regulation to international law and finance and corporate finance, and are, by coincidence, even equally divided between theoretical and empirical contributions. They all show, like the other papers presented in Mannheim, how theory and empirics can inform each other and how this interaction stimulates research. This interaction is all the more important in applications of contract theory, where endogeneity is the crux of all empirical work, which therefore needs to be theory-based in order to identify its relations. Vice versa, the well-known tendency of game and contract theory to "explain everything, explain nothing" (Sutton) requires contract theorists to constantly confront their ideas with empirical work. The Mannheim conference and the papers assembled in this volume are a great example of this kind of interaction.

The volume opens with a paper by Martin Hellwig who re-examines the famous Jensen–Meckling theory of "agency costs" in financial contracting. This paper was initially written in the early 1990s but never published, and has become a secret classic of financial contracting theory. Its starting point is very simple. Jensen and Meckling's (1976) proposition can be summarized by the statement that the issuance of different kinds of financial securities induces different types of moral hazard on the side of the issuer, and that the optimal mix of securities issued should minimize the sum of all these "agency costs". In particular, debt tends to induce excessive risk-taking, while equity tends to induce insufficient managerial effort. As a corollary, Jensen and Meckling's article has often been interpreted as providing a theory of capital structure. Hellwig notes that it makes little sense to add costs that arise from interrelated phenomena and that the impact of a combination of return schedules can only be understood by analyzing the incentives resulting from the whole package. In particular, reduced effort as a response to insufficient equity participation can generate incentives for excessive risk-taking, so that one incentive problem can aggravate the other. Hellwig therefore writes down an explicit version of the two-dimensional moral hazard problem that Jensen and Meckling had in mind. Interestingly, only few general results are available, most importantly that at a second-best contract there will be excessive risk-taking. Further results, on investment levels and effort provision, depend on the specification of the production function. An interpretation of the optimal incentive scheme in terms of debt and equity is possible only if outcomes can be observed without too much noise.

1042-9573/$ - see front matter
doi:10.1016/j.jfi.2009.08.001

Hellwig's paper strikes a cautionary note for the interpretation of debt and equity in terms of incentive contracts. At the same time, it is an excellent example of how contract theory can advance our understanding of real world institutions by deriving a rich set of properties that such institutions are expected to have and confronting these with the facts, in this case the stylized return schedules of debt and equity.

The paper by Bond and Newman undertakes something similar. It starts from the simple observation that punishment is a necessary ingredient of incentive contracts, and asks why extreme punishments are rarely observed in modern financial markets. A prominent example are debt contracts. Harsh punishments of delinquent borrowers were common until the 18th century and institutions such as debtors' prisons where abolished only gradually in the 19th century. There has been a clear tendency for punishments of bankrupt borrowers to become more and more lenient as our economies developed more and more. A simple theory that harsher punishment assures better performance is at odds with such observations. Bond and Newman offer an innovative argument by investigating the possible consequences of harsh punishments more thoroughly. They argue that such punishments typically generate externalities towards third parties in the economy, because the delinquent agent could contribute to the creation of surplus in other business relations. Forcing this agent into slavery or prison would eliminate this surplus and thus harm society. Since the future creation of surplus of third parties is typically ignored in bilateral contracting, this is an argument for the state to intervene and ban excessively harmful punishments.

This argument does not hold for other forms of contractual punishments that are observed in finance, such as the seizure of collateral. The transfer of collateral from the borrower to the lenders can be value reducing (if the borrower has a comparative advantage at using the assets such as in Hart and Moore (1998)), but the loss will be largely internalized by the contracting parties and can therefore be expected to be less of a concern for government intervention.

The third theory paper in this special issue by Ratnovski picks up the theme of government intervention and analyses the costs and benefits of lender-of-last-resort activity by government or central banks if banks are threatening to fail. This topic has gained particular relevance in 2008, and the theoretical analysis points to several worrying possible consequences of the recent wave of government support measures. Ratnovski proposes a simple model that focuses on the ex-ante incentives of banks to maintain liquidity buffers if this is privately costly and liquidity is expected to be provided by government intervention in case of systemic failures. While the costs of such interventions has been studied before (e.g., Rochet and Tirole, 1996), Ratnovski emphasizes the systemic implications for bank risk management practices. His model shows that in equilibrium banks can derive rents from maintaining insufficient liquidity, because an aggregate liquidity shortage will force the government to intervene ex post. The main policy question therefore is how to limit these rents. Ratnovski shows that a crucial determinant of successful lender-of-last-resort intervention is the information available to the lender of last resort. If he has sufficiently precise information about a failing bank's asset structure, he can tailor his intervention to the bank's fundamental quality and thus reduce the bailout rents. This will break the equilibrium expectations that the lender of last resort cannot punish opportunistic risk management strategies of the banking system and will improve the private incentives of banks to provision for risk. The paper thus extends the analysis of individually optimal risk management strategies and shows how government intervention can influence systemic behavior. This topic is clearly of first-order importance for our understanding of regulatory policy after the great financial crisis of 2007–08.

The paper by Bottazzi, Hellmann, and Da Rin bridges the gap between theory and empirical work in this special issue by providing both. The authors present a unique, hand-collected data set of more than 1000 venture capital deals in 17 European countries that allows them to address several questions on the use of venture capital in different economic and legal environments that have never been addressed before. In order to guide their empirical research, they present a theory of venture-capital financing that builds on the double-moral hazard model developed by Hellmann (1998), Schmidt (2003) and others. In the theory, the ease with which the investor or the entrepreneur can divert funds into their own pockets is a parameter the inverse of which is interpreted as an index of the quality of the legal system. The theory can thus make simple predictions about the impact of the quality of the

legal system on investor behavior and the structure of financial contracts. These predictions are then tested on the international data set. This type of test goes well beyond the seminal work by La Porta, Lopez de Silanes, Shleifer and Vishny (e.g., 1998), who only conduct aggregate tests of country characteristics. The findings support the proposed theory: better legal systems are associated with stronger investor involvement and with better protection of investors against downside risk. One of the novelties of the work by Bottazi, Hellmann, and Da Rin is that they can theoretically and empirically distinguish between the legal system of the investor and that of the firm. Interestingly, they find that the legal system of the investor seems to have the stronger effect on the venture capital relation. Hence, the legal system seems to affect venture capital practices not only directly, but also indirectly through the impact it has on investor behavior. Their paper thus not only opens a new perspective on the relation between law and finance but also yields fascinating insights into differences of financial practices across different countries.

In the next paper of this special issue, Masulis and Nahata discuss another source of heterogeneity in venture capital funding. It has long been known that venture capital from stand alone venture capital firms differs from that provided by corporate venture capitalists. Corporate venture capital is investment by established corporations who invest in start-up firms in order to gain early access to new technologies or products. These venture capitalists, on the one hand, typically are more attractive because they can provide more specialized expertise in key product markets or R&D, but on the other hand are more of a strategic threat to the entrepreneur because he must fear being more easily expropriated or marginalized once his venture matures. The problem is that information about corporate venture capital usually is not public. Masulis and Nahata overcome this difficulty by sampling corporate venture capital firms at their IPO. The publication requirements at the IPO stage allow the authors to collect the information necessary to better understand the relation between venture capitalist and start-up firm. This information includes, in particular, share ownership structure, board representation, and firm valuations.

This unique data set allows Masulis and Nahata to empirically validate a number of conjectures made in the theory of venture capital (e.g., Hellmann, 1998) that hitherto could not be investigated, such as the impact of the competitive relation between the corporate venture capitalist and the start-up firm on board representation and IPO pricing. The paper thus is another example of the productive interplay between contract theory and contract econometrics.

The final paper of the special issue by Lookman comes back full circle to the first paper and re-examines the Jensen–Meckling proposition of debt and risk-shifting empirically. Incidentally, the distortion of risk choices was the only robust result in Hellwig's analysis of the Jensen–Meckling problem. The starting point of Lookman's argument is the basic idea of Diamond (1984) that banks can control firms more effectively than dispersed investors, as their concentrated investment allows them to internalize the benefits of collective monitoring. If debt financing encourages risk-shifting, as postulated by Jensen and Meckling (1976), then this effect should therefore be smaller for firms with large bank debts than for firms with dispersed debt holders. Lookman tests this prediction by means of a new data set about firms' borrowing and hedging policies. The data are from the oil and gas exploration and production industry, which eliminates industry effects and at the same time features firms that are particularly exposed to risk, namely commodity price volatility. Faced with this risk, firms in the industry can hedge more or less. And indeed, Lookman finds that firms that rely more on bank borrowing hedge more. The paper provides a number of robustness checks and further tests, but its insight is as simple and fundamental as this. This is probably as good as it gets in terms of testing theoretical predictions. It is again a paper that exemplifies how theoretical and empirical research can stimulate each other, which is the main topic of this special issue.

References

Diamond, D., 1984. Financial intermediation and delegated monitoring. Rev. Econ. Stud. 51, 393–414.
Hart, O., Moore, J.H., 1998. Default and renegotiation: a dynamic model of debt. Quart. J. Econ. 113, 1–41.
Hellmann, T., 1998. The allocation of control rights in venture capital contracts. RAND J. Econ. 29, 57–76.
Jensen, M., Meckling, W.R., 1976. Theory of the firm: managerial behavior, agency cost and ownership structure. J. Finan. Econ. 3, 305–360.

La Porta, R., Lopez de Silanes, F., Shleifer, A., Vishny, R., 1998. Law and finance. J. Polit. Economy 106, 1113–1155.
Rochet, J.C., Tirole, J., 1996. Interbank lending and systemic risk. J. Money, Credit, Banking 28, 733–762.
Schmidt, K., 2003. Convertible securities and venture capital finance. J. Finance 58, 1139–1166.

Ernst-Ludwig von Thadden
University of Mannheim, Department of Economics,
L7, D-68131 Mannheim, Germany
E-mail address: vthadden@pool.uni-mannheim.de