Full text available at: http://dx.doi.org/10.1561/050000009

Corporate Financial Distress and Bankruptcy: A Survey

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Foundations and Trends^{\mathbb{R}} in Finance

Published, sold and distributed by: now Publishers Inc. PO Box 1024 Hanover, MA 02339 USA Tel. +1-781-985-4510 www.nowpublishers.com sales@nowpublishers.com

Outside North America: now Publishers Inc. PO Box 179 2600 AD Delft The Netherlands Tel. +31-6-51115274

The preferred citation for this publication is L. W. Senbet and T. Y. Wang, Corporate Financial Distress and Bankruptcy: A Survey, Foundations and Trends^{\mathbb{R}} in Finance, vol 5, no 4, pp 243–335, 2010

ISBN: 978-1-60198-576-7 © 2012 L. W. Senbet and T. Y. Wang

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Corporate Financial Distress and Bankruptcy: A Survey

Lemma W. Senbet¹ and Tracy Yue $Wang^2$

Abstract

This survey provides a synthetic and evaluative survey of issues in corporate financial distress and bankruptcy. This area has moved into a public domain as a result of the recent global financial crisis that witnessed failures of many venerable institutions that got rescued by the government. Hence, this survey highlights the resolution mechanisms not only in the private domain but also in the public domain, and it uses corporate finance paradigms to interpret some of the far-reaching developments in financial distress of systemic nature. This survey's theoretical anchor is a framework for the delineation of economic distress and financial distress. The difficulty in disentangling the dichotomy has been a central challenge in the empirics relating to financial distress, corporate bankruptcy, and the use of apparently cost-effective private mechanisms for resolving financial distress. This review devotes ample space on the discussion of conditions under which privatization of bankruptcy succeeds and fails, and the recent empirics on the subject.

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The review also grapples with the efficiency of bankruptcy codes and regimes, given the frequent usage of court-supervised mechanisms. The fundamental efficiency question about the bankruptcy law is whether the law effectively rehabilitates economically efficient but financially distressed firms and liquidates economically inefficient firms. This survey provides an ongoing debate in law and in economic theories about the efficiency of the U.S. bankruptcy code. Moreover, it examines a linkage between financial distress and corporate governance, which has received growing attention. The review goes beyond the United States to take a look at comparative bankruptcy codes around the world with a focus on bankruptcy reform issues in emerging economies. Finally, this survey takes us into a public domain and systemic financial distress. This is inspired by the recent global financial crisis. Is the standard bankruptcy procedure (e.g., those embedded in Chapters 11 and 7) sufficient for resolving systemic financial distress? The review attempts to answer this question in the context of the recently adopted landmark legislation, particularly the Dodd-Frank Act's Title II (Receivership), which governs the resolution of systemically critical institutions.

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There have been important developments in the area of corporate financial distress and bankruptcy since the comprehensive survey by Senbet and Seward (1995). This current survey builds upon the previous survey and repositions the debate in the context of the new developments.¹ The review provides a synthesis starting with the theoretical foundation and moving onto the empirical results. Surprisingly, many issues surrounding corporate financial distress and bankruptcy are still unresolved, and ample opportunities still exist for further research. We hope that the review will stimulate such research beyond setting the state-of-the-art in the area.

This area has moved into a public domain as a result of the recent global financial crisis that witnessed failures of many venerable

¹ There is another recent survey that focuses on the empirics of distress resolution mechanisms (Hotchkiss et al., 2008). That survey mainly reviews the empirical research on the use of private and court-supervised mechanisms for resolving financial distress. Our survey has a comprehensive coverage of both theory and empirics in this area. The timing of our survey also allows us to discuss the issue of systemic financial distress triggered by the global financial crisis and economic recession in recent years, and discuss the resolution mechanisms not only in the private domain but also in the public domain. In the empirical part, the two surveys have some overlap, yet have different emphasis on the topics covered.

2 Introduction

institutions that got rescued by the government. The determination on the part of the government to prevent a repeat of such bailouts has led to the landmark legislation in the form of the Dodd-Frank Wall Street Reform and Consumer Protection Act (hereafter Dodd-Frank Act). In particular, the Act provides for a resolution authority akin to private workouts but under government authority. The panic surrounding the global crisis and government intervention led to a departure of a normal workout and restructuring in which creditors were made whole while equity was wiped out. The Dodd-Frank Act purports to overcome the tax-payer bailouts and facilitate orderly distress resolution. Thus, this survey will highlight the resolution mechanisms not only in the private domain but also in the public domain, and we will use corporate finance paradigms to interpret some of these far-reaching developments in financial distress of systemic nature.

The outline of the survey is as follows. Section 2 provides the institutional features of financial distress and bankruptcy, focusing on the workings of the U.S. bankruptcy system as characterized by the features of Chapter 11 (reorganization) and Chapter 7 (liquidation). Section 3 provides a review of the major theoretical developments in corporate financial distress and bankruptcy, beginning with the Modigliani–Miller analog of bankruptcy irrelevancy to firm valuation and then moving onto the imperfect world with a focus on the efficiency characteristics of the private/market-based mechanisms and court-supervised mechanisms of resolving financial distress.

Section 4 reviews the available empirical work on financial distress and bankruptcy in a synthetic fashion. The synthesis for the overall interpretations of the many empirical studies is guided by our discussion of the theoretical predictions in Section 3. The review here begins with the fundamental question about the extent to which financial distress and bankruptcy costs are significant, and the extent to which these costs are internalized and externalized. The section highlights important changes that have taken place over the last two decades in both private workouts and court-supervised resolution mechanisms. It also includes discussions about the empirical evidence for post-bankruptcy firm performance and governance issues associated with financial distress. Section 5 looks at comparative bankruptcy codes around the world, which tend to vary along creditor rights and financial distress resolution mechanisms. In particular, we highlight bankruptcy features in several European countries differentiated by legal origin — the United Kingdom, France, Germany, and Sweden — and recent bankruptcy reforms in two BRIC countries — Brazil and India.

Section 6 examines the systemic nature of financial distress and bankruptcy. This is inspired by the recent events in the global financial crisis and the introduction of the landmark legislation — the Dodd-Frank Act. In particular, the review deals with the extent to which resolution mechanisms in the private domain can be applied to systemic crisis resolution, and the similarities and contrasts between the Dodd-Frank resolution regime and the existing corporate bankruptcy regime.

Since this survey is fairly long, we provide a summary of all the discussions in Section 7 so that readers can get a concise overview of the essential topics covered in this survey. We also point out fruitful areas for future research on corporate financial distress and bankruptcy.

- Adler, B. E. (1993), 'Financial and political theories of American corporate bankruptcy'. *Stanford Law Review* **45**, 311–346.
- Aghion, P., O. D. Hart, and J. Moore (1992), 'The economics of bankruptcy reform'. Journal of Law, Economics, and Organization 8, 523–546.
- Aivazian, V. A. and S. Zhou (2012), 'Is Chapter 11 Efficient?'. Financial Management 41, 229–253.
- Alderson, M. J. and B. L. Betker (1999), 'Post-bankruptcy performance: An analysis of reorganized firms' cash flows'. *Financial Man*agement 28, 68–82.
- Allen, F., A. Babus, and E. Carletti (2009), 'Financial crises: Theory and evidence'. Annual Review of Financial Economics 1(2009), 97–116.
- Allen, F. and E. Carletti (2010), 'An Overview of the crisis: Causes, consequences, and solutions'. *International Review of Finance* 10, 1–26.
- Allen, F. and E. Carletti (2011), 'Systemic risk from real estate and macroprudential regulation'. The Wharton School working paper.
- Almeida, H. and T. Philippon (2007), 'The risk-adjusted cost of financial distress'. Journal of Finance 62, 2557–2586.

- Altman, E. (1984), 'A further empirical investigation of the bankruptcy cost question'. Journal of Finance 39, 1067–1089.
- Altman, E. I. and E. S. Hotchkiss (2006), Corporate Financial Distress and Bankruptcy. Hoboken, NJ: John Wiley & Sons, 3rd edition.
- Andrade, G. and S. N. Kaplan (1998), 'How costly is financial (not economic) distress? Evidence from highly leverage transactions that became distressed'. *Journal of Finance* 53, 1443–1493.
- Araujo, A. and B. Funchal (2005), 'Bankruptcy law in Latin America: Past and future'. *Economia* 6, 149–216.
- Asquith, P., R. Gertner, and D. Scharfstein (1994), 'Anatomy of financial distress: An examination of junk bond issuers'. *Quarterly Journal* of Economics 109, 625–658.
- Ayotte, K. M. and E. R. Morrison (2009), 'Creditor control and conflict in Chapter 11'. Journal of Legal Analysis 1(2), 511–551.
- Baird, D. and E. Morrison (2011), 'Dodd-Frank for bankruptcy lawyers'. Columbia Law School working paper.
- Baird, D. G. and R. K. Rasmussen (2002), 'The end of bankruptcy'. Stanford Law Review 55, 751–789.
- Bebchuck, L. (1988), 'A new approach to corporate reorganization'. *Harvard Law Review* 101, 775–804.
- Bebchuck, L. (2002), 'Ex ante costs of violating absolute priority in bankruptcy'. Journal of Finance 57, 445–460.
- Bebchuck, L. and H. Chang (1992), 'Bargaining and the division of value in corporate reorganization'. *Journal of Law, Economics, and Organization* pp. 253–279.
- Bebchuck, L. and J. Fried (1996), 'The uneasy case for the priority of secured claims in bankruptcy'. Yale Law Journal 105, 857–891.
- Berkovitch, E. and R. Israel (1998), 'The bankruptcy decision and debt contract renegotiations'. *European Financial Review* 2, 1–27.
- Berkovitch, E. and R. Israel (1999), 'Optimal bankruptcy laws across different economic systems'. *Review of Financial Studies* **12**, 347–377.
- Berkovitch, E., R. Israel, and J. F. Zender (1997), 'Optimal bankruptcy law and firm-specific investments'. *European Economic Review* **41**, 487–497.

- Berlin, M., K. John, and A. Saunders (1996), 'Bank equity stakes in borrowing firms and financial distress'. *Review of Financial Studies* 9(3), 889–919.
- Bernardo, A. and E. L. Talley (1996), 'Investment policy and exitexchange offers within financially distressed firms'. *Journal of Finance* 51, 871–888.
- Bernhardt, D. and E. Nosal (2004), 'Near-sighted Justice'. Journal of Finance 59, 2655–2864.
- Bernstein, E. S. (2006), 'All's fair in love, war & bankruptcy? Corporate governance implications of CEO turnover in financial distress'. *Stanford Journal of Law, Business and Finance* 11, 298–324.
- Betker, B. L. (1995), 'Managements incentives, equity's bargaining power, and deviations from absolute priority in Chapter 11 bankruptcies'. Journal of Business 68, 161–183.
- Bharath, S., V. Panchapegesan, and I. Werner (2010), 'The changing nature of Chapter 11'. Working paper, Arizona State University.
- Bradley, M. and M. Rosenzweig (1992), 'The untenable case for Chapter 11'. The Yale Law Journal 101, 1043–1095.
- Bris, A., I. Welch, and N. Zhu (2006), 'The costs of bankruptcy: Chapter 7 liquidation versus Chapter 11 reorganization'. *Journal of Finance* 61, 1253–1303.
- Broadie, M., M. Chernov, and S. Sundaresan (2007), 'Optimal debt and equity values in the presence of Chapter 7 and Chapter 11'. *Journal* of Finance **62**, 1341–1377.
- Brown, D. T. (1989), 'Claimholder incentive conflicts in reorganization: The role of bankruptcy law'. *Review of Financial Studies* **2**, 109–123.
- Brown, D. T., C. M. James, and R. M. Mooradian (1993), 'The information content of distressed restructurings involving public and private debt claims'. *Journal of Financial Economics* 33, 93–118.
- Calomiris, C. W. and R. Herring (2011), 'Why and how to design an effective contingent capital requirement'. Columbia Business School Working Paper.
- Chatterjee, S., U. S. Dhillon, and G. G. Ramirez (1995), 'Coercive tender and exchange offers in distressed high-yield debt restructurings: An empirical analysis'. *Journal of Financial Economics* 38, 333–360.

- Claessens, S. and L. F. Klapper (2005), 'Bankruptcy around the world: Explanations of its relative use'. American Law and Economics Review 7, 253–283.
- Dahiya, S., K. John, M. Puri, and G. Ramirez (2003), 'The dynamics of debtor-in-possession financing: Bankruptcy resolution and the role of prior lenders'. *Journal of Financial Economics* 69, 259–280.
- Davydenko, S. and J. R. Franks (2008), 'Do bankruptcy codes matter? A study of defaults in France, Germany, and the UK'. Journal of Finance 63, 565–608.
- Denis, D. J. and D. K. Denis (1995), 'Causes of financial distress following leveraged recapitalizations'. *Journal of Financial Economics* 37, 129–158.
- Eberhart, A. C., E. I. Altman, and R. Aggarwal (1999), 'The equity performance of firms emerging from bankruptcy'. *Journal of Finance* 54, 1855–1868.
- Eberhart, A. C., W. T. Moore, and R. L. Roenfeldt (1990), 'Security pricing and deviations from the absolute priority rule in bankruptcy proceedings'. *Journal of Finance* 45, 1457–1470.
- Eckbo, E. B. and K. S. Thorburn (2008), 'Automatic bankruptcy auctions and fire-sales'. *Journal of Financial Economics* 89, 404–422.
- Fama, E. (1980), 'Agency problems and the theory of the firm'. Journal of Political Economy 88, 288–307.
- Faulkender, M., D. Kadyrzhanova, N. Prabhala, and L. Senbet (2010), 'Executive compensation: An overview of research on corporate practices and proposed reforms'. *Journal of Applied Corporate Finance* 22, 107–118.
- Franks, J. R., K. G. Nyborg, and W. N. Torous (1996), 'Comparison of US, UK and German insolvency codes'. *Financial Management* 25, 86–101.
- Franks, J. R. and O. Sussman (2005), 'Financial distress and bank restructuring of small to medium size UK companies'. *Review of Finance* 9, 65–96.
- Franks, J. R. and W. N. Torous (1989), 'An empirical investigation of U.S. firms in reorganization'. *Journal of Finance* 44, 747–770.

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- Franks, J. R. and W. N. Torous (1994), 'A comparison of financial recontracting in distressed exchanges and chapter 11 reorganizations'. *Journal of Financial Economics* 35, 349–370.
- French, K., M. Baily, and J. Campbell (2010), The Squam Lake Report: Fixing the Financial System. Princeton University Press.
- Gande, A., K. John, and L. W. Senbet (2008), 'Bank incentives, economic specialization, and financial crises in emerging economies'. *Journal of International Money and Finance* 27, 707–732.
- Garlappi, L., T. Shu, and H. Yan (2008), 'Default risk, shareholder advantage, and stock returns'. *Review of Financial Studies* 21(6), 2743–2778.
- Gennaioli, N. and S. Rossi (2011), 'Judicial discretion in corporate bankruptcy'. *Review of Financial Studies* 23, 4078–4114.
- Gertner, R. and D. Scharfstein (1991), 'A theory of workouts and the effects of reorganization law'. *Journal of Finance* 44, 747–770.
- Giammarino, R. M. (1989), 'The resolution of financial distress'. *Review* of Financial studies **2**, 25–47.
- Gilson, S. (1989), 'Management turnover and financial distress'. Journal of Financial Economics 25, 241–262.
- Gilson, S. (1990), 'Bankruptcy, boards, banks and blockholders: Evidence on changes in corporate ownership and control when firms default'. *Journal of Financial Economics* 27, 355–387.
- Gilson, S. (1997), 'Transactions costs and capital structure choice: Evidence from financially distressed firms'. Journal of Finance 52, 161–196.
- Gilson, S., K. John, and L. Lang (1990), 'Troubled debt restructurings: An empirical study of private reorganization of firms in default'. *Journal of Financial Economics* 27, 315–353.
- Gilson, S. and M. R. Vetsuypens (1993), 'CEO compensation in financially distressed firms: An empirical analysis'. *Journal of Finance* 48, 425–458.
- Graham, J. R. (2000), 'How big are the tax benefits of debt?'. *Journal* of Finance 55, 1901–1941.
- Haugen, R. A. and L. W. Senbet (1978), 'The insignificance of bankruptcy costs to the theory of optimal capital structure'. *Journal* of Finance 33, 383–392.

- Haugen, R. A. and L. W. Senbet (1988), 'Bankruptcy and agency costs: Their significance to the theory of optimal capital structure'. *Journal* of Financial and Quantitative Analysis 23, 27–38.
- Helwege, J. (1999), 'How long do junk bonds spend in default'. Journal of Finance 54, 341–357.
- Hotchkiss, E. S. (1995), 'Post-bankruptcy performance and management turnover'. Journal of Finance 50, 3–21.
- Hotchkiss, E. S., K. John, R. M. Mooradian, and K. S. Thorburn (2008),'Bankruptcy and the resolution of financial distress'. In: E. Eckbo (ed.): *Handbook of Empirical Corporate Finance*, vol. 2, Chapter 14.
- Hotchkiss, E. S. and R. M. Mooradian (1997), 'Vulture investors and the market for control of distressed firms'. *Journal of Financial Economics* 43, 401–432.
- James, C. (1996), 'Bank debt restructurings and the composition of exchange offers in financial distress'. Journal of Finance 51, 711–727.
- Jensen, M. C. (1989), 'Active investors, LBOs, and the privatization of bankruptcy'. Journal of Applied Corporate Finance 2, 35–44.
- Jiang, W., K. Li, and W. Wang (2012), 'Hedge funds and Chapter 11'. Journal of Finance 67, 513–560.
- John, K., A. Saunders, and L. W. Senbet (2000), 'A theory of bank regulation and management compensation'. *Review of Financial Studies* 13, 95–125.
- Kalay, A., R. Singhal, and E. Tashjian (2007), 'Is Chapter 11 costly?'. Journal of Financial Economics 84, 772–796.
- Kanda, H. and S. Levmore (1994), 'Explaining creditor priorities'. Virginia Law Review 80, 2103–2111.
- Kang, N. and N. Nayar (2004), 'The evolution of corporate bankruptcy law in India'. *Money and Finance* (March), 37–58.
- Khanna, N. and A. B. Poulsen (1995), 'Managers of financially distressed firms: Villains or scapegoats?'. Journal of Finance 50, 919–940.
- Kim, E. H. (1978), 'A mean-variance theory of optimal capital structure and corporate debt capacity'. *Journal of Finance* 33, 45–64.
- Kraus, A. and R. H. Litzenberger (1973), 'A state-preference model of optimal financial leverage'. *Journal of Finance* 28, 911–922.

Full text available at: http://dx.doi.org/10.1561/050000009

- La Porta, R., F. López-de-Silanes, A. Shleifer, and R. W. Vishny (1998), 'Law and Finance'. *Journal of Political Economy* **106**, 1113–1155.
- Lang, L. and R. Stulz (1992), 'Contagion and competitive intraindustry effects of bankruptcy announcements'. *Journal of Financial Economics* 32, 45–60.
- Leland, H. E. (1994), 'Corporate debt value, bond covenants, and optimal capital structure'. Journal of Finance 49, 1213–1252.
- LoPucki, L. (2003), 'The nature of the bankrupt firm: A response to Baird and Rasmussen's the end of bankruptcy'. *Stanford Law Review* 56, 645–671.
- Lubben, S. J. (2000), 'The direct costs of corporate reorganization: An empirical examination of professional fees in large Chapter 11 cases'. *American Bankruptcy Law Journal* 509, 508–552.
- Maksimovic, V. and G. Phillips (1998), 'Asset efficiency and reallocation decisions of bankrupt firms'. Journal of Finance 53, 1495–1532.
- Miller, H. R. and S. Y. Waisman (2004), 'Does Chapter 11 reorganization remain a viable option for distressed businesses for the twentyfirst century?'. American Bankruptcy Law Journal 78, 153–200.
- Miller, M. and J. Stiglitz (1999), 'Bankruptcy protection against macroeconomic shocks: The case for "Super Chapter 11"'. World Bank Mimeo.
- Modigliani, F. and M. Miller (1958), 'The cost of capital, corporation finance, and the theory of investment'. American Economic Review 48, 261–275.
- Modigliani, F. and M. Miller (1963), 'Corporate income taxes and the cost of capital'. American Economic Review 53, 433–443.
- Mooradian, R. M. (1994), 'The effect of bankruptcy protection on investment: Chapter 11 as a screening device'. *Journal of Finance* **49**, 1403–1430.
- Myers, S. (1977), 'Determinants of corporate borrowing'. Journal of Financial Economics 5, 147–176.
- Opler, T. C. and S. Titman (1994), 'Financial distress and corporate performance'. Journal of Finance 49, 1015–1040.
- Orderly Liquidation Authority (2011), 'Provisions under Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Final Rule: FDIC)'. *Federal Register* **76**(136).

- Pulvino, T. C. (1998), 'Do asset fire-sales exist? An empirical investigation of commercial aircraft transactions'. *Journal of Finance* 53, 939–978.
- Pulvino, T. C. (1999), 'Effects of bankruptcy court protection on asset sales'. Journal of Financial Economics 52, 151–186.
- Ramey, V. A. and M. D. Shapiro (2001), 'Displaced capital: A study of aerospace plant closings'. *Journal of Political Economy* 109, 958–992.
- Roe, M. (1983), 'Bankruptcy and debt: A new model for corporate reorganization'. *Columbia Law Review* 83, 527–602.
- Schwartz, A. (1997), 'A contract theory approach to business bankruptcy'. Yale Law Journal 107, 1807–1851.
- Scott, J. H. (1976), 'A theory of optimal capital structure'. Bell Journal of Economics 7, 33–54.
- Senbet, L. W. and J. K. Seward (1995), 'Financial distress, bankruptcy and reorganization'. In: R. A. Jarrow et al. (ed.): Handbooks in Operations Research and Management Science (Elsevier Science), vol. 9. pp. 921–961.
- Shleifer, A. and R. Vishny (1992), 'Liquidation values and debt capacity: A market equilibrium approach'. Journal of Finance 47, 1343–1366.
- Skeel, D. A. (2003), 'Creditor's ball: The "new" new corporate governance in Chapter 11'. University of Pennsylvania Law Review 152, 917–951.
- Skeel, D. A. (2004), 'The past, present, and future of debtor-inpossession financing'. Cardozo Law Review 25, 1905–1934.
- Stiglitz, J. (1974), 'On the irrelevance of corporate financial policy'. American Economic Review 64, 851–866.
- Stulz, R. and H. Johnson (1985), 'An analysis of secured debt'. Journal of Financial Economics 14, 501–521.
- Tashjian, E., R. C. Lease, and H. J. McConnell (1996), 'Prepacks: An empirical analysis of prepackaged bankruptcies'. *Journal of Financial Economics* 40, 135–162.
- Thorburn, K. S. (2000), 'Bankruptcy auctions: Costs, debt recovery, and firm survival'. *Journal of Financial Economics* 58, 337–368.
- Triantis, G. (1993), 'A theory of the regulation of debtor-in-possession financing'. Vanderbilt Law Review 46, 901–935.

- von Furstenberg, G. M. (2011), 'Contingent capital to strengthen the private safety net for financial institutions: CoCos to the rescue?'. Deutsche Bundesbank, Research Centre, Discussion Paper Series 2: Banking and Financial Studies.
- Warner, J. B. (1977), 'Bankruptcy costs: Some evidence'. Journal of Finance 32, 337–347.
- Weiss, L. A. (1990), 'Bankruptcy resolution: Direct costs and violation of priority of claims'. Journal of Financial Economics 27, 285–314.
- Weiss, L. A. and K. H. Wruck (1998), 'Information problems, conflicts of interest, and asset stripping: Chapter 11's failure in the case of Eastern Airlines'. *Journal of Financial Economics* 48, 55–97.
- White, M. J. (1989), 'The corporate bankruptcy decision'. Journal of Economic Perspectives 3, 129–151.
- White, M. J. (1994), 'Corporate bankruptcy as a filtering device: Chapter 11 reorganizations and out-of-court debt restructurings'. *Journal of Law, Economics, and Organization* 10, 268–295.