Economics 234C

Financial Decision-Making in Firms

Spring 2008
Wednesday 10-12, 608-7 Evans

Instructor
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Syllabus

Course Overview
Economics 234C provides a theoretical and empirical introduction of the core topics in Corporate Finance, including: internal corporate investment, external corporate investment (= mergers & acquisitions); capital structure and financial contracting; bankruptcy; corporate governance.
The course differs from traditional courses (and textbooks) in Corporate Finance as follows:

(1) The course emphasizes empirical methodology in applied microeconomics, some of which has not even been applied in Corporate Finance (so far). As such, the course will link to empirical literature in labor economics, public finance, development economics and other fields of applied micro. The course will also be more empirical and methodological than the typical Corporate Finance class. Students will also have to complete a larger empirical project as part of the requirements. (See below.)

(2) Relatedly, not only methodologies but also topics from neighboring fields (e.g. labor, development, public finance) and corporate governance issues will receive more attention, for example the role of the media. We will cover a number of papers which are not part of the traditional corporate finance curriculum. As such, the course is intended to help doctoral students whose research focuses on those neighboring fields to explore links to financial economics and to benefit, for example, from data and methodology in finance. And it is also intended to introduce doctoral students in finance to methodologies and related research in those related fields.

    Note: Since this is an introductory course in Corporate Finance, those connections to other fields will get less time devoted and remain more superficial than they deserve (given how the field of Corporate Finance is developing) and than I would like them to be. Luckily, the Department recently hired **David Sraer** as a post-doc for two years, and this year he is offering an "**Advanced Corporate Finance**" class, **Econ 296**, focusing exactly on this theme, research in Corporate Finance on research related to neighboring fields (e.g., IO, labor, macro...). I highly recommend it, in particular for students with applied interests.

(3) We will cover research in Behavioral Corporate Finance wherever it speaks to the current topic. Behavioral Corporate Finance is a novel and growing area of research that aims at integrating insights from psychology into our understanding of financial decision-making in firms. Behavioral Corporate Finance comprises (i) research on rational managerial decision-making in light of investor sentiment, e.g. market timing of security issuances, and (ii) research on biased managerial decision-making, e.g. the role of managerial overconfidence in merger decisions.

Course Assignments and Grading

There will be a several longer assignments, at least one of which involves data work, most likely using Compustat. (Get a login now! See instructions at wrds.wharton.upenn.edu.)
We will also have a mid-term and a final exam. They will contain theoretical and empirical questions about the material covered in class.
The grade composition will be as follows:

40% for theoretical & empirical assignments;
20% for the midterm exam;
40% for the final exam;

Finally, I will count class participation (including evidence of intelligently reading the required papers and discussing them) by adding or subtracting up to 10 points to the rest of the grades.

Exams:
- Regular exam, questions about a model, questions about regression specifications.
- **But**: very much geared towards research. I hope to use ideas / examples that either suggest research ideas or build on recent research (with follow up). Think about it as 2 hours being forced to develop research ideas.
- Exam dates: in class; midterm either **on 3/12 or on 3/19**; final **on 5/7**.

For 3rd-years and higher (who have passed field exams and are preparing for orals or beyond):
You can substitute the assignments with a paper. You should only do so if you are already working on a (serious) paper and are sure that you will be able to submit a complete paper at the end of the course. (NOTE: Even if you fall into this category, it is not clear you should choose this option. Hands-on work on problem sets is very often the start of a thesis paper …)

Required Background

As a general rule, you should have a solid training in econometrics at the level of 240A and 240B. For example, you should be familiar with OLS estimation, panel data models, and discrete-choice models, and you should have no uncertainty as to what fixed effects do in a regression. Although it is not a requirement for this course, I recommend taking at least one empirical course or course sequence: labor, public, development. In addition, I recommend 244 for advanced training in econometrics.

- You will be required to use STATA for the mandatory homework assignment.
- You will be required to use data from WRDS for the mandatory homework assignment.
    - WRDS = main source of finance data sets
    - Got a class account.
        - Usernames: mfe07, mfe07a, mfe07b

        - Password (for all usernames): Mfe0307 [case-sensitive]
    - Alternative: Go to wrds.wharton.upenn.edu/connect when in the Haas building or while using the campus VPN when not in Haas, and you can access the web-based version of WRDS.
    - Gary Peete, Head of Reference Services, Thomas J. Long Business & Economics Library, Haas School of Business, will give an introduction to using WRDS and other data sets on 2/13 (about 1¼ to 1½ hours).

Second, the course draws on contract theory and some game theory. I expect the first-year graduate sequence in micro-theory as background.

Third, I strongly recommend taking Adam Szeidl's Asset Pricing class (234A). While not a prerequisite, it will ease the understanding of financial markets and finance-specific techniques such as the calculation of abnormal returns. If you are planning to take Financial Economics as a field, you <u>have</u> to take Asset Pricing. Also, if your main interest lies in the area of micro or macro theory you should take Asset Pricing. If, instead, your interest lies in the areas of labor economics / public finance / development / political economy / behavioral economics it is less crucial.

Fourth, I extra-strongly recommend going to finance-related seminars. Nothing conveys better what is new and exciting in finance than the ongoing research. There are two options.

- First, Haas has a regular Finance Seminar, held on Thursdays, 4:10-5:40pm at Haas. You should definitely attend as many of the Haas seminars as possible if you think that your research might end up being finance related and if you want to take advantage of the finance job market. Finance has its own "lingo" and style of research (and of seminars), and it is crucial to get to know those as early as possible. <u>Email me</u> if you want to get on the distribution list of seminar announcements.
- Second, I organize a Seminar + "Advising Session" in Financial Economics. The main purpose of the seminar is to simply coordinate with neighboring fields (macro, theory, public, development, psych & econ, labor) and have speakers whose research combines those fields. Since much of the most exciting research in Corporate Finance these days crosses the border to other fields, I highly recommend attending to get inspiration for interesting, cutting-edge research topics. Many of the seminars will, however, simply be joint with Haas Finance. (That's why the default meeting time is Thursday, 4-6pm. However, whenever we coordinate with other seminars at the Economics Department, the seminar will typically meet at those times.)

  Details are on http://emlab.berkeley.edu/users/webfac/malmendier/e235_sp08/e235.shtml

  "Advising Session": for students already actively pursuing a research paper. We meet about once a week and about 4 randomly picked (or pre-determined) people report about their progress. This semester, we are a bit tight since Adam Szeidl is on leave and I am teaching 4 courses … Nevertheless, if you are interested in being kept in the loop, email me and I will add you to the email list.

  ALSO PLANNED is a financial economics lunch, depending on whether a large enough crowd of students are making progress on research papers …

Schedule of classes

Note: The schedule below and the literature list are more of a "wish list." I will adjust them as we move along in the semester (and I will keep handing out updated versions).

Date	Class	Topic
Wednesday, 1/23	1	Overview: Topics and Tool
Wednesday, 1/30	2	Internal Investment (1): Empirics; Financial Constraints
Wednesday, 2/6	3	Internal Investment (2): Asymmetric Information
Wednesday, 2/13	4	Introduction to WRDS (Gary Peete, Head of Reference Services, Thomas J. Long Business & Economics Library, Haas School of Business) Internal Investment (2, continued): Asymmetric Information – other empirical applications & theoretical treatment of debt Internal Investment (3): Agency
Wednesday, 2/20	5	Internal Investment (4): Overconfidence External Investment (1): Stylized Facts about M&A
Wednesday, 2/27	6	External Investment (2): Corporate Control and Voting External Investment (3): Market Timing
Wednesday, 3/5	7	External Investment (4): Managerial Hubris Capital Structure (I): Modigliani-Miller Theorem, Debt Overhang
Wednesday, 3/12	8	***Mid-term***
Wednesday, 3/19	9	Discussion of HW 1 Capital Structure (II): Asymmetric Information and Pecking Order
Wednesday, 3/26	*Spring Recess*	
Wednesday, 4/2	10	Finishing up Capital Structure (II): Asymmetric Information and Pecking Order Discussion of HW 2
Wednesday, 4/9	11	Capital Structure (III): Biased Managers
Wednesday, 4/16	12	Capital Structure (IV): Biased Investors [Market Timing] Discussion of Midterm
Wednesday, 4/23	13	IPOs, SEOs, Dividends and Repurchases Financial Contracting (Costly State-Verification) Executive Compensation
Wednesday, 4/30	14	Discussion of HW 3 Corporate Governance, Media "Law, Politics & Finance" (Financial development & growth) Course evaluation
Wednesday, 5/7	15	***Final exam***

Textbooks:

- Jean Tirole, Corporate Finance.
- Hart, Firms, Contracts, and Financial Structure

Class 2 Internal Investment

A. *Is investment sensitive to cash-flow?*
B. *Similar puzzles in other fields of economics: macro, development*
C. *Why is investment sensitive to cash-flow (I): Financial Constraints*

Stein Jeremy C. (*forthcoming*), “Agency, Information and Corporate Investment,” in: G. Constantinides, M. Harris and R. Stulz (eds.), *Handbook of the Economics of Finance*, Amsterdam, North-Holland.

* Fazzari, S. M., R. G. Hubbard and B.C. Petersen (1988), “Financing Constraints and Corporate Investment,” *Brookings Papers on Economics Activity*, pp. 141-195.

* Kaplan, Steven N. and Luigi Zingales (1997), “Do Investment-Cash Flow Sensitivities Provide Useful Measures of Financing Constraints?” *Quarterly Journal of Economics* 112, pp. 159-216.

Rauh, Joshua, (2006), “Investment and Financing Constraints: Evidence from the Funding of Corporate Pension Plans,” *Journal of Finance* 61, pp. 33-71.

* Lamont, Owen (1997), “Cash Flow and Investment: Evidence from Internal Capital Markets,” *Journal of Finance* 52, pp. 83-109.

Holmström, Bengt (1999), “Managerial Incentive Problems: A Dynamic Perspective,” *Review of Economic Studies* 66, pp. 169-182.

Blanchard, Olivier; Lopez-de-Silanes, Florencio; and Shleifer, Andrei (1994), “What do firms do with cas windfalls?” *Journal of Financial Economics* 36, pp. 337-360.

<u>Class 3</u> Internal Investment (II)
A. *Introduction to WRDS and other finance-related data sets.*
B. *Why is investment sensitive to cash-flow (2): Asymmetric information*

WRDS documentation class!

* Myers, Stewart and N. Majluf (1984), “Corporate Financing and Investment Decisions when Firms Have Information that Investors Do Not Have,” *Journal of Financial Economics* 13, pp. 187-222.

<u>Class 4</u> Internal Investment (III)
A. *Why is investment sensitive to cash-flow (2 continued): Asymmetric information – more on the empirics (I/collateral sensitivity) and more on the theory (modeling debt)*
B. *Why is investment sensitive to cash-flow (3 + 4): Agency Costs and Overconfidence*

* Jensen, Michael and William Meckling (1976), “Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure,” *Journal of Financial Economics* 3, pp. 305-360.

* Jensen, Michael (1986), “Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers,” *American Economic Review* 76, pp. 323-329.

Stein, Jeremy (1997), “Internal Capital Markets and the Competition for Corporate Resources,” *Journal of Finance* 52, pp. 111-133.

Rajan, Raghuram, Henri Servaes and Luigi Zingales (2000), “The Cost of Diversity: The Diversification Discount and Inefficient Investment,” *Journal of Finance* 55, pp. 35-80.

Stein, Jeremey (1996), “Rational Capital Budgeting in an Irrational World,” *Journal of Business* 69, pp. 429-455.

<u>Class 5</u> Internal Investment (IV), External Investment (I)
A. *Why is investment sensitive to cash-flow (4): CEO Overconfidence*
B. *External Investment (1): Stylized facts on mergers and acquisitions.*

* Heaton, J.B. (2002), "Managerial Optimism and Corporate Finance," *Financial Management* 31, pp. 33-45.

* Malmendier, Ulrike and Geoffrey Tate (2005), "CEO Overconfidence and Corporate Investment", *Journal of Finance* 60, pp. 2661-2700.

Stein, Jeremy (1989), "Efficient Capital markets, Inefficient Firms: A Model of Myopic Corporate Behavior," *Quarterly Journal of Economics* 104, pp. 655-669.

* Andrade, Gregor, Mark Mitchell and Erik Stafford (2001), "New Evidence and Perspectives on Mergers," *Journal of Economic Perspectives* 15, pp. 103-120.

* Holmström, Bengt and Steven Kaplan (2001), "Corporate Governance and Merger Activity in the U.S.: Making Sense of the 80's and 90's," *Journal of Economic Perspectives* 15, pp. 121-144

* Moeller, Sara, Frederik Schlingemann, and René Stulz, (2005), "Wealth destruction on a massive scale? A study of acquiring-firm returns in the recent merger wave," *Journal of Finance* 60, pp. 757-782.

<u>Class 6</u> External Investment (II)

A. *External Investment (2): Free-riding theories*
B. *External Investment (3): Misvaluation theories*

* Grossman, Sanford and Oliver Hart (1980), "Takeover Bids, the Free Rider Problem and the Theory of the Corporation," *Bell Journal of Economics* 11, pp. 42-69.

* Grossman, Sanford and Oliver Hart (1988), "One Share, One Vote and the Market for Corporate Control," *Journal of Financial Economics* 20, pp. 175-202.

* Shleifer, Andrei and Robert Vishny (2003), "Stock Market Driven Acquisitions," *Journal of Financial Economics* 70, pp. 295-311.

Zingales, Luigi (1995), "What Determines the Value of Corporate Votes?," *Quarterly Journal of Economics* 110, pp. 1047-1073.

<u>Class 7</u> External Investment (III) + Capital Structure (I)

A. *External Investment (3, continued): Misvaluation theories & Empirical Tests*
B. *External Investment (4): Overvaluation theories (overconfidence) & Empirical Tests*
C. *Capital Structure (1): Introduction - Modigliani-Miller Theorem*

* Savor, Pavel (2006), "Do Stock Mergers Create Value for Acquirers?" *Working Paper.*

* Roll, Richard (1986), "The Hubris Hypothesis of Corporate Takeovers," *Journal of Business* 59, pp. 197-216.

* Malmendier, Ulrike and Geoffrey Tate (2005), "Who Makes Acquisitions? CEO Overconfidence and the Market's Reaction", *Working Paper.*

* Heaton, J.B. (2002), "Managerial Optimism and Corporate Finance," *Financial Management* 31, pp. 33-45.

Morck, Randall, Andrei Shleifer and Robert Vishny (1990), "Do Managerial Objectives Drive Bad Acquisitions?" *Journal of Finance* 45, pp. 31-48.

<u>Class 8</u> Capital Structure (II)

A. *Capital Structure (2): Asymmetric information*
B. *Capital Structure (3): Pecking order*

* Modigliani, Franco and Merton H. Miller (1958), "The Cost of Capital, Corporation Finance, and the Theory of Investment," *American Economic Review* 48, pp. 261-297.

* Miller, Merton H. (1977), "Debt and Taxes," *Journal of Finance* 32, pp. 261-275.

* Miller, Merton H. (1988), "The Modigliani-Miller Propositions After 30 Years," *Journal of Economic Perspectives* 2, pp. 99-120.

Myers, Stewart (1977), "Determinants of Corporate Borrowing," *Journal of Financial Economics* 5, pp. 147-175.

Rajan, Raghuram and Luigi Zingales (1995), "What Do We Know About Capital Structure? Some Evidence from International Data," *Journal of Finance* 50, pp. 1421-1460.

Harris, Milt and Athur Raviv (1991), "The Theory of Capital Structure," *Journal of Finance* 46, pp. 297-355.

* Myers, Stewart (1984), "The Capital Structure Puzzle," *Journal of Finance* 39, pp. 575-592.

Fama, Eugene and Kenneth French (2002), "Testing Tradeoff and Pecking Order Predictions About Dividends and Debt," *Review of Financial Studies* 15, pp. 1-33.

Choe, Hyuk, Ronald Masulis and Virkam Nanda (1993), "Common Stock Offerings Across the Business Cycle: Theory and evidence," *Journal of Empirical Finance* 1, pp. 3-33.

<u>Class 9</u> Capital Structure (III)

A. *Capital Structure (3): Managerial characteristics and managerial biases*

* Malmendier, Ulrike; Tate, Geoffrey; Yan, Jun (2007), "Corporate Financial Policies with Overconfident Managers." *Working Paper*.

* Graham, John R. (2000), "How Big Are the Tax Benefits of Debt?" *Journal of Finance* 55, pp. 1901-1941.

<u>Class 10</u> Capital Structure (II)

A. *Capital Structure (4): Investor biases and market timing*

* Baker, Malcolm and Jeffrey Wurgler (2000), "The Equity Share in New Issues and Aggregate Stock Returns," *Journal of Finance* 55, pp. 2219-2257.

* Baker, Malcolm and Jeffrey Wurgler (2002), "Market Timing and Capital Structure," *Journal of Finance* 57, pp. 1-32.

<u>Class 11</u> New Issues, Dividends, Repurchases

A. *Stylized Facts about IPOs*
B. *Introduction to Corporate Governance and Executive Compensation*

* Loughran, Tim and Jay Ritter (1995), "The New Issues Puzzle," *Journal of Finance* 50, pp.23-51.

Fama, Eugene and Kenneth French (2005), "Financing Decisions: Who Issues Stock?" *Journal of Financial Economics* 76: 549-582.

Asquith, Paul and David Mullins (1986), "Equity Issues and Offering Dilution," *Journal of Financial Economics* 15, pp. 61-89.

* Jay Ritter (1991), "The long-run performance of initial public offerings," Journal of Finance 42, pp.365-394.

* Townsend, Robert (1979), “Optimal Contracts and Competitive Markets with Costly State Verification,” *Journal of Economic Theory* 21, pp. 265-293.

* Murphy, Kevin (1999), “Executive Compensation”, *Handbook of Labor Economics*.

Lintner, John (1956), “Distributions of Incomes of Corporations Among Dividends, Retained Earnings and Taxes,” *American Economic Review* 46, pp.97-113.

Miller, Merton H. and Kevin Rock (1985), “Dividend Policy Under Information Asymmetry,” *Journal of Finance* 40, 1031-1051.

LaPorta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny (2000), “Agency Problems and Dividend Policies Around the World,” *Journal of Finance* 55, pp. 1-33.

Fama, Eugene and Kenneth R. French (2001), “Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay?” *Journal of Financial Economics* 60, pp. 3-43.

* Alon Brav, John R. Graham , Campbell R. Harvey, and Roni Michaely (2005), “Payout Policy in the 21st Century,” *Journal of Financial Economics* 77, pp. 483-527.

* Chetty, Raj and Emmanuel Saez (2005), “Dividend Taxes and Corporate Behavior: Evidence from the 2003 Dividend Tax Cut,” *Quarterly Journal of Economics* 120, pp. 791-833.

<u>Class 12</u> Corporate Governance (I)

Jensen, Michael and William Meckling (1976), “Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure,” *Journal of Financial Economics* 3, pp. 305-360.

Jensen, Michael (1986), “Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers,” *American Economic Review* 76, pp. 323-329.

Shleifer, Andrei and Robert Vishny (1997), “A Survey of Corporate Governance,” *Journal of Finance* 52, pp.737-783.

* Gompers, Paul, Joy Ishii, and Andrew Metrick (2003), “Corporate Governance and Equity Prices,” *Quarterly Journal of Economics* 118, pp. 107-155.

* Bertrand, Marianne and Mullainathan, Sendhil (2006) “Enjoying the Quiet Life: Corporate Governance and Managerial Preferences,” *Journal of Political Economy* (forthcoming)

Adams, Renee; Heitor Almeida, and Daniel Ferreira (2002), “Powerful CEOs and their Impact on Corporate Performance,” *Working paper*.

Brickley, James, Jeffrey Coles, and Rory Terry (1994), “Outside Directors and the Adoption of Poison Pills,” *Journal of Financial Economics* 35, pp. 371-390.

Byrd, John and Kent Hickman (1992), “Do Outside Director Monitor Managers?” *Journal of Financial Economics* 32, pp. 195-221.

* Hermalin, Benjamin E., and Michael S. Weisbach (1988), “The Determinants of Board Composition,” *Rand Journal of Economics* 19, pp. 589-606.

* Weisbach, Micahel (1988), “Outside Directors and CEO Turnover”, *Journal of Financial Economics* 20, pp. 431-460.

<u>Class 13</u> Corporate Governance (II)

A. *Executive Compensation*

B. *Role of the Media*

Dyck, Alexander and Luigi Zingales (2002), “The Corporate Governance Role of the Media,” *Working Paper*.

Hall, Brian, and Jeffrey Liebman (1998), "Are CEOs really paid like bureaucrats?" *Quarterly Journal of Economics* 113, pp. 623-692.

* Murphy, Kevin (1999), "Executive Compensation", *Handbook of Labor Economics*.

Malmendier, Ulrike and Geoffrey Tate (2005), "CEO Superstars," *Working Paper*.

* Ariely, Dan; Gneezy, Uri; Loewenstein, George; and Nina Mazar (2005). "Large Stakes and Big Mistakes," *Working Paper*.

Aggarwal, Rajesh, and Andrew Samwick (1999) "Executive compensation , strategic competition, and relative performance: Theory and evidence," *Journal of Finance* 54, pp. 1999-2043.

<u>Class 14</u> Financial Distress

A. *Empirical approaches to measuring the costs of financial distress*

Cutler, David, and Lawrence H. Summers (1988), "The Costs of Conflict Resolution and Financial Distress: Evidence from Texaco-Pennzoil Litigation," *RAND Journal of Economics* 19, pp. 157-172.

Gertner, Robert and David Scharfstein (1991), "A Theory of Workouts and the Effects of Reorganization law," *Journal of Finance* 46, pp. 1189-1222.

Shleifer, Andrei and Robert Vishny (1992), "Liquidation Values and Debt Capacity: A Market Equilibrium Approach," *Journal of Finance* 47, pp. 1343-1366.

Pulvino, Todd (1998), "Do Asset Fire Sales Exist? An Empirical Investigation of Commercial Aircraft Transactions," *Journal of Finance* 53, pp. 939-978.

Andrade, Gregor and Steven Kaplan (1998), "How Costly is Financial (Not Economic) Distress? Evience from Highly Leveraged transactions That Became Distressed," *Journal of Finance* 53, pp. 1443-1493.

Material for extra Law and Finance class

A. *An overview over the law & finance literature*

B. *"It's politics, stupid .."*

Malmendier, Ulrike (2007). "Law and Finance `At the Origin'," *Working Paper*.

Jayaratne, J. and Strahan, Philip E. (1996) "The Finance-Growth Nexus: Evidence from Bank Branch Deregulation." *Quarterly Journal of Economics* 111, pp. 639-70.

King, Robert G. and Levine, Ross (1993). "Finance and Growth: Schumpeter Might Be Right." *Quarterly Journal of Economics* 108, pp. 305-60.

King, Robert G. and Levine, Ross (1993). "Finance, Entrepreneurship, and Growth," *Journal of Monetary Economics* 32, pp. 513-42.

La Porta, Rafael; Lopez-de-Silanes, Florencio; Shleifer, Andrei and Vishny, Robert W. (1998), "Law and Finance," *Journal of Political Economy* 106, pp. 1113-1155.

La Porta, Rafael; Lopez-de-Silanes, Florencio; Shleifer, Andrei and Vishny, Robert W. (1997) "The Legal Determinants of External Finance," *Journal of Finance* 53, pp. 1131-50.

Levine, Ross (1997). "Financial Development and Economic Growth: Views and Agenda," *Journal of Economic Literature* 35, pp. 688-726.

Rajan, Raghuram G. and Zingales, Luigi (1998). "Financial Dependence and Growth," *American Economic Review* 88, pp. 559-86.

Material for extra Theory classes

Townsend, Robert (1979), "Optimal Contracts and Competitive Markets with Costly State Verification," *Journal of Economic Theory* 21, pp. 265-293.

Gale, Douglas and Martin Hellwig (1985), "Incentive-Compatible Debt Contracts: the One-Period Problem," *Review of Economic Studies* 52, pp. 647-663.

Aghion, Phillipe and Patrick Bolton (1992), "An Incomplete Contracts Approach to Financial Contracting," *Review of Economic Studies* 59, pp. 473-494.

Bolton, Patrick and David Scharfstein (1996), "Optimal Debt Structure and the Number of Creditors," *Journal of Political Economy* 104, pp.1-25.

Hart, Oliver (1995), *Firms, Contracts, and Financial Structure*, Oxford University Press: London. Chapter 5.

Hart, Oliver and John Moore (1994), "A Theory of Debt Based on the Inalienability of Human Capital," *Quarterly Journal of Economics* 109, pp. 841-879.

Hart, Oliver and John Moore (1998), "Default and Renegotiation: A Dynamic Model of Debt," *Quarterly Journal of Economics* 113, pp. 1-41.