
Corporate Finance

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Course description

This is a first graduate course in corporate finance. It has two aims. The first is to give you command of the canonical theories of financing, contracting, and investment under frictions. The second, and the one that will matter more for your own work, is to give you a calibrated sense of which empirical findings in this field are solid, which are contested, and which are widely cited but probably wrong.

The course is organized *by friction*, not by transaction. Each lecture takes one departure from the Modigliani–Miller benchmark—taxes, agency, asymmetric information, incomplete contracting, limited pledgeability, intermediation—and follows it through theory, measurement, and identification.

Format

Readings are listed in tiers. **Required** readings—two per lecture—are required and you are expected to discuss those papers in class. **Theory background** gives the models the lecture derives; you should read these if the board work was not enough, and skim them otherwise. **Optional** readings extend the lecture in the direction I think most useful. **Further reading** is for students who intend to work in the area: it is a starting bibliography rather than a list anyone is expected to complete.

Assessment

Component	Weight	Notes
Exam	35%	
Replication	25%	Replicate one paper.
Class Participation	15%	Discussion of papers in class.
Research proposal	25%	Five pages: question, identification strategy, data, and what would falsify the argument.

Schedule at a glance

#	Topic	Block
1	The MM benchmark, taxes, and what a leverage regression identifies	A
2	Agency costs of debt and equity	A
3	Asymmetric information: pecking order, signaling, timing	A
4	Financial contracting I: incomplete contracts and control rights	B
5	Financial contracting II: dynamic agency and structural estimation	B
6	Financial constraints and investment	B
7	Banks, credit supply, and the identification of credit shocks	C
8	Corporate finance and the macroeconomy	C
9	Who owns firms now: governance, activism, private markets	D
10	Intangible capital, the changing firm, and open questions	D

Lectures

BLOCK A CAPITAL STRUCTURE: THE CLASSICAL CORE

Lectures 1–3

Lecture 1. The MM benchmark, taxes, and what a leverage regression identifies

Required

- Graham, J. (2000). How big are the tax benefits of debt? *Journal of Finance*.
- Lemmon, M., M. Roberts and J. Zender (2008). Back to the beginning: persistence and the cross-section of corporate capital structure. *Journal of Finance*.

Theory background

- Modigliani, F. and M. Miller (1958). The cost of capital, corporation finance and the theory of investment. *American Economic Review*.
- Miller, M. (1977). Debt and taxes. *Journal of Finance*.
- DeAngelo, H. and R. Masulis (1980). Optimal capital structure under corporate and personal taxation. *Journal of Financial Economics*.

Optional

- Welch, I. (2004). Capital structure and stock returns. *Journal of Political Economy*.
- Graham, J. and M. Leary (2011). A review of empirical capital structure research and directions for the future. *Annual Review of Financial Economics*.
- DeAngelo, H. (2022). The capital structure puzzle: what are we missing? *Journal of Financial and Quantitative Analysis*.

Further reading

- Myers, S. (1984). The capital structure puzzle. *Journal of Finance*.
- Rajan, R. and L. Zingales (1995). What do we know about capital structure? Some evidence from international data. *Journal of Finance*.
- Titman, S. and R. Wessels (1988). The determinants of capital structure choice. *Journal of Finance*.
- Andrade, G. and S. Kaplan (1998). How costly is financial (not economic) distress? *Journal of Finance*.
- Leary, M. and M. Roberts (2005). Do firms rebalance their capital structures? *Journal of Finance*.
- Strebulaev, I. (2007). Do tests of capital structure theory mean what they say? *Journal of Finance*.
- Korteweg, A. (2010). The net benefits to leverage. *Journal of Finance*.
- Faulkender, M. and M. Petersen (2006). Does the source of capital affect capital structure? *Review of Financial Studies*.

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- Heider, F. and A. Ljungqvist (2015). As certain as debt and taxes: estimating the tax sensitivity of leverage from state tax changes. *Journal of Financial Economics*.
 - Frank, M. and V. Goyal (2009). Capital structure decisions: which factors are reliably important? *Financial Management*.
 - Graham, J., M. Leary and M. Roberts (2015). A century of capital structure: the leverage of corporate America. *Journal of Financial Economics*.

Lecture 2. Agency costs of debt and equity

Required

- Gilje, E. (2016). Do firms engage in risk-shifting? Empirical evidence. *Review of Financial Studies*.
- Melzer, B. (2017). Mortgage debt overhang: reduced investment by homeowners at risk of default. *Journal of Finance*.

Theory background

- Jensen, M. and W. Meckling (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*.
- Myers, S. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*.
- Jensen, M. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*.

Optional

- Caballero, R., T. Hoshi and A. Kashyap (2008). Zombie lending and depressed restructuring in Japan. *American Economic Review*.
- Acharya, V., T. Eisert, C. Eufinger and C. Hirsch (2019). Whatever it takes: the real effects of unconventional monetary policy. *Review of Financial Studies*.
- Hennessy, C. (2004). Tobin's Q, debt overhang, and investment. *Journal of Finance*.

Further reading

- Smith, C. and J. Warner (1979). On financial contracting: an analysis of bond covenants. *Journal of Financial Economics*.
- Parrino, R. and M. Weisbach (1999). Measuring investment distortions arising from stockholder–bondholder conflicts. *Journal of Financial Economics*.
- Eisdorfer, A. (2008). Empirical evidence of risk shifting in financially distressed firms. *Journal of Finance*. Read against Gilje.
- Rauh, J. (2009). Risk shifting versus risk management: investment policy in corporate pension plans. *Review of Financial Studies*.
- Giroud, X. and H. Mueller (2017). Firm leverage, consumer demand, and employment losses during the Great Recession. *Quarterly Journal of Economics*.
- Kalemli-Özcan, S., L. Laeven and D. Moreno (2022). Debt overhang, rollover risk, and corporate investment: evidence from the European crisis. *Journal of the European Economic Association*.
- Hart, O. and J. Moore (1995). Debt and seniority: an analysis of the role of hard claims in constraining management. *American Economic Review*.
- Grullon, G. and R. Michaely (2002). Dividends, share repurchases, and the substitution hypothesis. *Journal of Finance*.
- DeAngelo, H., L. DeAngelo and R. Stulz (2006). Dividend policy and the earned/contributed capital mix. *Journal of Financial Economics*.

Lecture 3. Asymmetric information: pecking order, signaling, and timing

Required

- Frank, M. and V. Goyal (2003). Testing the pecking order theory of capital structure. *Journal of Financial Economics*.
- Baker, M. and J. Wurgler (2002). Market timing and capital structure. *Journal of Finance*.

Theory background

- Myers, S. and N. Majluf (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*.
- Leland, H. and D. Pyle (1977); Ross, S. (1977).

Optional

- Fama, E. and K. French (2005). Financing decisions: who issues stock? *Journal of Financial Economics*.
- Stein, J. (1996). Rational capital budgeting in an irrational world. *Journal of Business*.
- Bond, P., A. Edmans and I. Goldstein (2012). The real effects of financial markets. *Annual Review of Financial Economics*.

Further reading

- Shyam-Sunder, L. and S. Myers (1999). Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics*.
- Lemmon, M. and J. Zender (2010). Debt capacity and tests of capital structure theories. *Journal of Financial and Quantitative Analysis*.
- Leary, M. and M. Roberts (2010). The pecking order, debt capacity, and information asymmetry. *Journal of Financial Economics*.
- Asquith, P. and D. Mullins (1986). Equity issues and offering dilution. *Journal of Financial Economics*.
- Loughran, T. and J. Ritter (1995). The new issues puzzle. *Journal of Finance*.
- Graham, J. and C. Harvey (2001). The theory and practice of corporate finance: evidence from the field. *Journal of Financial Economics*.
- Baker, M., J. Stein and J. Wurgler (2003). When does the market matter? Stock prices and the investment of equity-dependent firms. *Quarterly Journal of Economics*.
- Malmendier, U. and G. Tate (2005). CEO overconfidence and corporate investment. *Journal of Finance*.
- Malmendier, U., G. Tate and J. Yan (2011). Overconfidence and early-life experiences: the effect of managerial traits on corporate financial policies. *Journal of Finance*.

BLOCK B CONTRACTS, DYNAMICS, AND INVESTMENT

Lectures 4–6

Lecture 4. Financial contracting I: incomplete contracts and control rights

Required

- Kaplan, S. and P. Strömberg (2003). Financial contracting theory meets the real world: an empirical analysis of venture capital contracts. *Review of Economic Studies*.
- Chava, S. and M. Roberts (2008). How does financing impact investment? The role of debt covenants. *Journal of Finance*.

Theory background

- Aghion, P. and P. Bolton (1992). An incomplete contracts approach to financial contracting. *Review of Economic Studies*.
- Hart, O. and J. Moore (1998). Default and renegotiation: a dynamic model of debt. *Quarterly Journal of Economics*.
- Bolton, P. and D. Scharfstein (1990). A theory of predation based on agency problems in financial contracting. *American Economic Review*.

Optional

- Roberts, M. and A. Sufi (2009). Control rights and capital structure. *Journal of Finance*.
- Nini, G., D. Smith and A. Sufi (2012). Creditor control rights, corporate governance, and firm value. *Review of Financial Studies*.

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- Roberts, M. (2015). The role of dynamic renegotiation and asymmetric information in financial contracting. *Journal of Financial Economics*.

Further reading

- Townsend, R. (1979). Optimal contracts and competitive markets with costly state verification. *Journal of Economic Theory*.
- Gale, D. and M. Hellwig (1985). Incentive-compatible debt contracts: the one-period problem. *Review of Economic Studies*.
- Innes, R. (1990). Limited liability and incentive contracting with ex-ante action choices. *Journal of Economic Theory*.
- Hart, O. and J. Moore (1994). A theory of debt based on the inalienability of human capital. *Quarterly Journal of Economics*.
- Diamond, D. (1991). Monitoring and reputation: the choice between bank loans and directly placed debt. *Journal of Political Economy*.
- Rajan, R. (1992). Insiders and outsiders: the choice between informed and arm's-length debt. *Journal of Finance*.
- Bolton, P. and D. Scharfstein (1996). Optimal debt structure and the number of creditors. *Journal of Political Economy*.
- Benmelech, E. and N. Bergman (2008). Liquidation values and the credibility of financial contract renegotiation: evidence from U.S. airlines. *Quarterly Journal of Economics*.
- Benmelech, E. and N. Bergman (2009). Collateral pricing. *Journal of Financial Economics*.
- Sufi, A. (2007). Information asymmetry and financing arrangements: evidence from syndicated loans. *Journal of Finance*.
- Murfin, J. (2012). The supply-side determinants of loan contract strictness. *Journal of Finance*.
- Denis, D. and J. Wang (2014). Debt covenant renegotiation and creditor control rights. *Journal of Financial Economics*.

Lecture 5. Financial contracting II: dynamic agency and structural estimation

Required

- Hennessy, C. and T. Whited (2007). How costly is external financing? Evidence from a structural estimation. *Journal of Finance*.
- Strebulaev, I. and T. Whited (2012). Dynamic models and structural estimation in corporate finance. *Foundations and Trends in Finance*. Selected sections.

Theory background

- DeMarzo, P. and Y. Sannikov (2006). Optimal security design and dynamic capital structure in a continuous-time agency model. *Journal of Finance*.
- DeMarzo, P. and M. Fishman (2007). Optimal long-term financial contracting. *Review of Financial Studies*.

Optional

- Biais, B., T. Mariotti, G. Plantin and J.-C. Rochet (2007). Dynamic security design. *Review of Economic Studies*.
- Bolton, P., H. Chen and N. Wang (2011). A unified theory of Tobin's q , corporate investment, financing, and risk management. *Journal of Finance*.
- Nikolov, B. and T. Whited (2014). Agency conflicts and cash: estimates from a dynamic model. *Journal of Finance*.

Further reading

- Sannikov, Y. (2008). A continuous-time version of the principal-agent problem. *Review of Economic Studies*.
- Clementi, G. and H. Hopenhayn (2006). A theory of financing constraints and firm dynamics. *Quarterly Journal of Economics*.
- Albuquerque, R. and H. Hopenhayn (2004). Optimal lending contracts and firm dynamics. *Review of Economic Studies*.

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- Quadrini, V. (2004). Investment and liquidation in renegotiation-proof contracts with moral hazard. *Journal of Monetary Economics*.
 - Leland, H. (1994). Corporate debt value, bond covenants, and optimal capital structure. *Journal of Finance*.
 - Fischer, E., R. Heinkel and J. Zechner (1989). Dynamic capital structure choice: theory and tests. *Journal of Finance*.
 - Goldstein, R., N. Ju and H. Leland (2001). An EBIT-based model of dynamic capital structure. *Journal of Business*.
 - DeAngelo, H., L. DeAngelo and T. Whited (2011). Capital structure dynamics and transitory debt. *Journal of Financial Economics*.
 - Morellec, E., B. Nikolov and N. Schürhoff (2012). Corporate governance and capital structure dynamics. *Journal of Finance*.
 - Li, S., T. Whited and Y. Wu (2016). Collateral, taxes, and leverage. *Review of Financial Studies*.

Lecture 6. Financial constraints and investment

Required

- Fazzari, S., R. G. Hubbard and B. Petersen (1988) and Kaplan, S. and L. Zingales (1997). Read as a pair.
- Erickson, T. and T. Whited (2000). Measurement error and the relationship between investment and q . *Journal of Political Economy*.

Theory background

- Hayashi, F. (1982). Tobin's marginal q and average q : a neoclassical interpretation. *Econometrica*.
- Stein, J. (2003). Agency, information and corporate investment. *Handbook of the Economics of Finance*. Selected sections.

Optional

- Rauh, J. (2006). Investment and financing constraints: evidence from the funding of corporate pension plans. *Journal of Finance*.
- Almeida, H., M. Campello and M. Weisbach (2004). The cash flow sensitivity of cash. *Journal of Finance*.
- Hadlock, C. and J. Pierce (2010). New evidence on measuring financial constraints. *Review of Financial Studies*.
- Peters, R. and L. Taylor (2017). Intangible capital and the investment- q relation. *Journal of Financial Economics*.

Further reading

- Farre-Mensa, J. and A. Ljungqvist (2016). Do measures of financial constraints measure financial constraints? *Review of Financial Studies*.
- Whited, T. and G. Wu (2006). Financial constraints risk. *Review of Financial Studies*.
- Lamont, O., C. Polk and J. Saá-Requejo (2001). Financial constraints and stock returns. *Review of Financial Studies*.
- Whited, T. (1992). Debt, liquidity constraints, and corporate investment: evidence from panel data. *Journal of Finance*.
- Hoshi, T., A. Kashyap and D. Scharfstein (1991). Corporate structure, liquidity, and investment: evidence from Japanese industrial groups. *Quarterly Journal of Economics*.
- Lamont, O. (1997). Cash flow and investment: evidence from internal capital markets. *Journal of Finance*.
- Blanchard, O., F. Lopez-de-Silanes and A. Shleifer (1994). What do firms do with cash windfalls? *Journal of Financial Economics*.
- Moyen, N. (2004). Investment-cash flow sensitivities: constrained versus unconstrained firms. *Journal of Finance*.
- Gomes, J. (2001). Financing investment. *American Economic Review*.
- Cummins, J., K. Hassett and S. Oliner (2006). Investment behavior, observable expectations, and internal funds. *American Economic Review*.

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- Banerjee, A. and E. Duflo (2014). Do firms want to borrow more? Testing credit constraints using a directed lending program. *Review of Economic Studies*.
 - Zwick, E. and J. Mahon (2017). Tax policy and heterogeneous investment behavior. *American Economic Review*.
 - Bond, S. and J. Van Reenen (2007). Microeconomic models of investment and employment. *Handbook of Econometrics*.
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BLOCK C INTERMEDIATION, CREDIT SUPPLY, AND PROPAGATION *Lectures 7–8*

Required

- Khwaja, A. and A. Mian (2008). Tracing the impact of bank liquidity shocks: evidence from an emerging market. *American Economic Review*.
- Chodorow-Reich, G. (2014). The employment effects of credit market disruptions. *Quarterly Journal of Economics*.

Theory background

- Diamond, D. (1984). Financial intermediation and delegated monitoring. *Review of Economic Studies*.
- Holmström, B. and J. Tirole (1997). Financial intermediation, loanable funds, and the real sector. *Quarterly Journal of Economics*.

Optional

- Jiménez, G., S. Ongena, J.-L. Peydró and J. Saurina (2014, 2017). Hazardous times for monetary policy; macroprudential policy and credit supply.
- Amiti, M. and D. Weinstein (2018). How much do idiosyncratic bank shocks affect investment? *Journal of Political Economy*.
- Paravisini, D., V. Rappoport, P. Schnabl and D. Wolfenzon (2015). Dissecting the effect of credit supply on trade. *Review of Economic Studies*.
- Herreño, J. The aggregate effects of bank lending cuts. Working paper.

Further reading

- Peek, J. and E. Rosengren (2000). Collateral damage: effects of the Japanese bank crisis on real activity in the United States. *American Economic Review*.
- Kashyap, A. and J. Stein (2000). What do a million observations on banks say about the transmission of monetary policy? *American Economic Review*.
- Ivashina, V. and D. Scharfstein (2010). Bank lending during the financial crisis of 2008. *Journal of Financial Economics*.
- Becker, B. and V. Ivashina (2014). Cyclicity of credit supply: firm level evidence. *Journal of Monetary Economics*.
- Schnabl, P. (2012). The international transmission of bank liquidity shocks: evidence from an emerging market. *Journal of Finance*.
- Iyer, R., J.-L. Peydró, S. da-Rocha-Lopes and A. Schoar (2014). Interbank liquidity crunch and the firm credit crunch. *Review of Financial Studies*.
- Paravisini, D. (2008). Local bank financial constraints and firm access to external finance. *Journal of Finance*.
- Huber, K. (2018). Disentangling the effects of a banking crisis: evidence from German firms and counties. *American Economic Review*.
- Greenstone, M., A. Mas and H.-L. Nguyen (2020). Do credit market shocks affect the real economy? *American Economic Journal: Economic Policy*.
- Bentolila, S., M. Jansen and G. Jiménez (2018). When credit dries up: job losses in the Great Recession. *Journal of the European Economic Association*.
- Degryse, H., O. De Jonghe, S. Jakovljević, K. Mulier and G. Schepens (2019). Identifying credit supply shocks with bank-firm data. *Journal of Financial Intermediation*.

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- Berg, T., M. Reisinger and D. Streitz (2021). Spillover effects in empirical corporate finance. *Journal of Financial Economics*.
 - Chodorow-Reich, G., O. Darmouni, S. Luck and M. Plosser (2022). Bank liquidity provision across the firm size distribution. *Journal of Financial Economics*.

Lecture 8. Corporate finance and the macroeconomy

Required

- Chaney, T., D. Sraer and D. Thesmar (2012). The collateral channel: how real estate shocks affect corporate investment. *American Economic Review*.
- Ottonello, P. and T. Winberry (2020). Financial heterogeneity and the investment channel of monetary policy. *Econometrica*.

Theory background

- Kiyotaki, N. and J. Moore (1997). Credit cycles. *Journal of Political Economy*.
- Bernanke, B., M. Gertler and S. Gilchrist (1999). The financial accelerator in a quantitative business cycle framework. Mechanism only.

Optional

- Barrot, J.-N. and J. Sauvagnat (2016). Input specificity and the propagation of idiosyncratic shocks in production networks. *Quarterly Journal of Economics*.
- Costello, A. (2020). Credit market disruptions and liquidity spillover effects in the supply chain. *Journal of Political Economy*.
- Alfaro, L., M. García-Santana and E. Moral-Benito (2021). On the direct and indirect real effects of credit supply shocks. *Journal of Financial Economics*.
- Crouzet, N. and N. Mehrotra (2020). Small and large firms over the business cycle. *American Economic Review*.

Further reading

- Bernanke, B. and M. Gertler (1989). Agency costs, net worth, and business fluctuations. *American Economic Review*.
- Gertler, M. and S. Gilchrist (1994). Monetary policy, business cycles, and the behavior of small manufacturing firms. *Quarterly Journal of Economics*.
- Gilchrist, S. and E. Zakrajšek (2012). Credit spreads and business cycle fluctuations. *American Economic Review*.
- Mian, A. and A. Sufi (2014). What explains the 2007–2009 drop in employment? *Econometrica*.
- Cloyne, J., C. Ferreira, M. Froemel and P. Surico (2023). Monetary policy, corporate finance, and investment. *Journal of the European Economic Association*.
- Jeenas, P. Firm balance sheet liquidity, monetary policy shocks, and investment dynamics. Working paper.
- Khan, A. and J. Thomas (2013). Credit shocks and aggregate fluctuations in an economy with production heterogeneity. *Journal of Political Economy*.
- Buera, F. and B. Moll (2015). Aggregate implications of a credit crunch: the importance of heterogeneity. *American Economic Journal: Macroeconomics*.
- Moll, B. (2014). Productivity losses from financial frictions: can self-financing undo capital misallocation? *American Economic Review*.
- Midrigan, V. and D. Y. Xu (2014). Finance and misallocation: evidence from plant-level data. *American Economic Review*.
- Acemoglu, D., V. Carvalho, A. Ozdaglar and A. Tahbaz-Salehi (2012). The network origins of aggregate fluctuations. *Econometrica*.
- Carvalho, V., M. Nirei, Y. Saito and A. Tahbaz-Salehi (2021). Supply chain disruptions: evidence from the Great East Japan Earthquake. *Quarterly Journal of Economics*.

Lecture 9. Who owns firms now: governance, activism, and private markets

Required

- Brav, A., W. Jiang, F. Partnoy and R. Thomas (2008). Hedge fund activism, corporate governance, and firm performance. *Journal of Finance*.
- Doidge, C., G. A. Karolyi and R. Stulz (2017). The U.S. listing gap. *Journal of Financial Economics*.

Theory background

- Grossman, S. and O. Hart (1980). Takeover bids, the free-rider problem, and the theory of the corporation. *Bell Journal of Economics*.
- Admati, A. and P. Pfleiderer (2009). The “Wall Street Walk” and shareholder activism. *Review of Financial Studies*.

Optional

- Cuñat, V., M. Giné and M. Guadalupe (2012). The vote is cast: the effect of corporate governance on shareholder value. *Journal of Finance*.
- Gompers, P., J. Ishii and A. Metrick (2003), with Bebchuk, L., A. Cohen and C. Wang (2013) as the correction.
- Azar, J., M. Schmalz and I. Tecu (2018), with Dennis, P., K. Gerardi and C. Schenone (2022). Read as a dispute.
- Appel, I., T. Gormley and D. Keim (2016). Passive investors, not passive owners. *Journal of Financial Economics*.
- Ewens, M. and J. Farre-Mensa (2020). The deregulation of the private equity markets and the decline in IPOs. *Review of Financial Studies*.

Further reading

- Shleifer, A. and R. Vishny (1997). A survey of corporate governance. *Journal of Finance*.
- Shleifer, A. and R. Vishny (1986). Large shareholders and corporate control. *Journal of Political Economy*.
- Edmans, A. (2009). Blockholder trading, market efficiency, and managerial myopia. *Journal of Finance*.
- Bertrand, M. and S. Mullainathan (2003). Enjoying the quiet life? Corporate governance and managerial preferences. *Journal of Political Economy*.
- Giroud, X. and H. Mueller (2011). Corporate governance, product market competition, and equity prices. *Journal of Finance*.
- Gormley, T. and D. Matsa (2016). Playing it safe? Managerial preferences, risk, and agency conflicts. *Journal of Financial Economics*.
- Brav, A., W. Jiang and H. Kim (2015). The real effects of hedge fund activism: productivity, asset allocation, and labor outcomes. *Review of Financial Studies*.
- Appel, I., T. Gormley and D. Keim (2019). Standing on the shoulders of giants: the effect of passive investors on activism. *Review of Financial Studies*.
- Asker, J., J. Farre-Mensa and A. Ljungqvist (2015). Corporate investment and stock market listing: a puzzle? *Review of Financial Studies*.
- Bernstein, S. (2015). Does going public affect innovation? *Journal of Finance*.
- Gao, X., J. Ritter and Z. Zhu (2013). Where have all the IPOs gone? *Journal of Financial and Quantitative Analysis*.
- Kaplan, S. and P. Strömberg (2009). Leveraged buyouts and private equity. *Journal of Economic Perspectives*.
- Boucly, Q., D. Sraer and D. Thesmar (2011). Growth LBOs. *Journal of Financial Economics*.
- Bernstein, S., J. Lerner and F. Mezzanotti (2019). Private equity and financial fragility during the crisis. *Review of Financial Studies*.

Lecture 10. Intangible capital, the changing firm, and open questions

Required

- Peters, R. and L. Taylor (2017). Intangible capital and the investment- q relation. *Journal of Financial Economics*.
- Crouzet, N. and J. Eberly (2019). Understanding weak capital investment: the role of market concentration and intangibles. Working paper.

Theory background

- Eisfeldt, A. and D. Papanikolaou (2013). Organization capital and the cross-section of expected returns. *Journal of Finance*.

Optional

- Ewens, M., R. Peters and S. Wang. Measuring intangible capital with market prices. Working paper.
- Bolton, P. and M. Kacperczyk (2021). Do investors care about carbon risk? *Journal of Financial Economics*.
- Berg, F., J. Kölbel and R. Rigobon (2022). Aggregate confusion: the divergence of ESG ratings. *Review of Finance*.

Further reading

- Crouzet, N., J. Eberly, A. Eisfeldt and D. Papanikolaou (2022). The economics of intangible capital. *Journal of Economic Perspectives*.
- Corrado, C., C. Hulten and D. Sichel (2009). Intangible capital and U.S. economic growth. *Review of Income and Wealth*.
- Falato, A., D. Kadyrzhanova, J. Sim and R. Steri (2022). Rising intangible capital, shrinking debt capacity, and the U.S. corporate savings glut. *Journal of Finance*.
- Bates, T., K. Kahle and R. Stulz (2009). Why do U.S. firms hold so much more cash than they used to? *Journal of Finance*.
- Begenau, J. and B. Palazzo (2021). Firm selection and corporate cash holdings. *Journal of Financial Economics*.
- Kogan, L., D. Papanikolaou, A. Seru and N. Stoffman (2017). Technological innovation, resource allocation, and growth. *Quarterly Journal of Economics*.
- Eisfeldt, A., E. Kim and D. Papanikolaou (2022). Intangible value. *Review of Finance*.
- De Loecker, J., J. Eeckhout and G. Unger (2020). The rise of market power and the macroeconomic implications. *Quarterly Journal of Economics*.
- Gutiérrez, G. and T. Philippon (2017). Investmentless growth: an empirical investigation. *Brookings Papers on Economic Activity*.
- Hassan, T., S. Hollander, L. van Lent and A. Tahoun (2019). Firm-level political risk: measurement and effects. *Quarterly Journal of Economics*.
- Sautner, Z., L. van Lent, G. Vilkov and R. Zhang (2023). Firm-level climate change exposure. *Journal of Finance*.
- Ilhan, E., Z. Sautner and G. Vilkov (2021). Carbon tail risk. *Review of Financial Studies*.
- Hong, H. and M. Kacperczyk (2009). The price of sin: the effects of social norms on markets. *Journal of Financial Economics*.