

**General Seminar for PhD Candidates (FINC-520-0)**  
**Kellogg School of Management**  
**Northwestern University**  
Spring Quarter 2009

Professor Janice Eberly  
Professor Andrea Eisfeldt

**Course Description**

**Topics in Finance: a second year graduate course for PhD students in finance and economics.**  
**Tuesdays, 2-5 pm, in room 4214**

The course is designed to introduce research ideas and develop tools for advanced graduate students.

The first half of the course (Professor Eberly) introduces corporate finance and asset pricing models with capital. This section addresses optimal investment with various types of capital frictions, such as adjustment costs and irreversible investment, under uncertainty, and includes real options models. Equilibrium (for macroeconomics and asset pricing) topics include production-based asset pricing, multi-sector models, capital liquidity and reallocation, and equilibrium approaches to real options, including empirical applications and testing.

The second half of this course (Professor Eisfeldt) will explore the relationship between financial markets and the macroeconomy. Topics include market liquidity; modeling, measurement, and implications of aggregate investment opportunities; dynamics of firm financing and financial constraints; capital reallocation and restructuring; and the measurement and valuation of organization capital.

Week 1: March 31

Introduction: Optimal investment in “partial equilibrium”  
Abel and Eberly, AER 1994

Week 2: to April 14

Option values: McDonald and Siegel, QJE 1986

Week 3: April 20

Equilibrium with real options: Berk, Green and Naik, JF 1999

Week 4: April 21

Production based asset pricing, multi-sector models: Eberly and Wang, 2009

Week 5: April 28

Empirical survey: see section 6 in the reading list

## Grading

Evaluation for the course will be based on successful completion of three written assignments. The first two assignments are referee reports, which are to be three to five pages long (each). You should complete one report on a paper from Professor Eberly's reading list, and one report on a paper from Professor Eisefeldt's reading list. Papers from off the reading list may be allowed upon approval of the instructor. Your selection needs to be pre-approved by the Professor. Your assignment will be evaluated on giving a clear distillation of what the paper is about, and a thoughtful assessment of the paper's strengths and weaknesses, including an analysis of the paper's contributions.

The third assignment is to complete a research proposal (roughly 3 pages) describing a research project that is feasible, interesting, and extends the literature that we have discussed this quarter. It could be an extension or improvement upon the paper discussed in the referee report in the previous assignment. More detailed guidance is provided on the course web site.

## Readings (First Five Weeks)

1. Benchmark corporate and equilibrium models with capital
  - a. *The user cost of capital*: Jorgenson, Dale W., "Capital Theory and Investment Behavior," **American Economic Review Papers and Proceedings**, 53 (May 1963), 247-259.
  - b. Hall, Robert and Dale Jorgenson, "Tax Policy and Investment Behavior," **American Economic Review**, 57, June 1967, pp. 391-414.
  - c. *Lucas Trees*: Lucas, Robert E., Jr., "Asset Prices in an Exchange Economy," **Econometrica**, 46, 6 (November 1978), 1429-1445.
  - d. *CIR model*: Cox, John, J. E. Ingersoll and S. A. Ross, "A Theory of the Term Structure of Interest Rates," **Econometrica**, 53, 2 (March 1985), 385--407.
  - e. *Tobins' Q, average and marginal*: Hayashi, Fumio, "Tobin's marginal Q and average Q : A neoclassical interpretation," **Econometrica**, 50, 215-224, 1982.
  
2. Models with adjustment costs; real options
  - a. Abel, Andrew and Janice Eberly, "A Unified Model of Investment Under Uncertainty," **American Economic Review** 84(5), December 1994, pp. 1369-1385.
  - b. McDonald, Robert and Daniel Siegel, "The Value of Waiting to Invest," **Quarterly Journal of Economics**, Vol. 101, No. 4., November 1986, 707-728.  
Stable URL: <http://www.jstor.org/stable/1884175>
  - c. Dixit, Avinash, and Robert Pindyck, **Investment under Uncertainty**, Princeton University Press, 1994.
  - d. Stokey, Nancy, **The Economics of Inaction: Stochastic Control Models with Fixed Costs**, Princeton University Press, Princeton NJ, 2009.
  - e. Abel, Andrew and Janice Eberly, "Optimal Investment with Costly Reversibility," **Review of Economic Studies** 63(4) No. 217, October 1996, pp. 581-594.
  - f. Abel, Andrew, Avinash K. Dixit, Janice Eberly, and Robert S. Pindyck, "Options, the Value of Capital, and Investment," **Quarterly Journal of Economics** 111(3), August 1996, pp. 753-777.
  - g. Dixit, Avinash, "Entry and Exit Decisions under Uncertainty," **The Journal of Political Economy**, Vol. 97, No. 3 (Jun., 1989), pp. 620-638.

Stable URL: <http://www.jstor.org/stable/1830458>

- h. Miao, Jianjun, and Neng Wang, "Experimentation under Uninsurable Idiosyncratic Risk: An Application to Entrepreneurial Survival, manuscript, May 2007.  
<http://www0.gsb.columbia.edu/faculty/nwang/working.html>
3. Asset pricing with adjustment costs: production-based asset pricing
    - a. Kogan, Leonid, "Asset prices and real investments," **Journal of Financial Economics** 73 (2004) 411–431.
    - b. Berk, Jonathan, Richard Green, and Vasant Naik, "Optimal Investment, Growth Options, and Security Returns," **The Journal of Finance**, Vol 54, no 5, October 1999.
    - c. Cochrane, John, "A Cross-Sectional Test of an Investment-Based Asset Pricing Model," **The Journal of Political Economy**, Vol. 104, No. 3 (Jun., 1996), pp. 572-621  
Stable URL: <http://www.jstor.org/stable/2138864>
    - d. Cochrane, John, "Production-Based Asset Pricing and the Link Between Stock Returns and Economic Fluctuations," **The Journal of Finance**, Vol. 46, No. 1 (Mar., 1991), pp. 209-237. Stable URL: <http://www.jstor.org/stable/2328694>
    - e. Jermann, Urban J, "Asset Pricing in Production Economies," **Journal of Monetary Economics**, April 1998, 257-275.
  4. Financing constraints
    - a. Gomes, Joao, "Financing Investment," **The American Economic Review**, Vol. 91, No. 5 (Dec., 2001), pp. 1263-1285. Stable URL: <http://www.jstor.org/stable/2677925>
    - a. Gomes, Joao, Leonid Kogan, and Lu Zhang, "Equilibrium Cross Section of Returns," **Journal of Political Economy**, 2003, vol. 111, no. 4.
  5. Multi-sector models and capital reallocation
    - a. See the Lucas model and the CIR model under "Benchmark models"
    - b. Cochrane, John, Francis Longstaff and Pedro Santa-Clara, "Two Trees," **Review of Financial Studies**, 21, 1 (January 2008), 347-385.
    - c. Santos, Tano and Pietro Veronesi, "Labor Income and Predictable Stock Returns," **Review of Financial Studies**, 19, 1 (Spring 2006), 1-44.
    - d. Eberly and Wang, "Reallocation and Growth," forthcoming, **American Economic Review papers and proceedings**, [January 2009](http://www.aeaweb.org/conference/papers/2009/09_01_01_eberly_wang.pdf).  
<http://www.kis-nt2.com/docs/faculty/eberly/htm/Research/research.htm>
    - e. Eberly and Wang, "Reallocating and Pricing Illiquid Capital: two productive trees, manuscript, [January 2009](http://www.aeaweb.org/conference/papers/2009/09_01_01_eberly_wang.pdf).  
<http://www.kis-nt2.com/docs/faculty/eberly/htm/Research/research.htm>
  6. Empirical / quantitative papers
    - a. Financing constraints and other finance effects
      - i. Fazzari, Steven M., R. Glenn Hubbard and Bruce C. Petersen, "Financing Constraints and Corporate Investment," **Brookings Papers on Economic Activity**, Vol. 1988, No. 1 (1988), pp. 141-206. Stable URL: <http://www.jstor.org/stable/2534426>
      - ii. Whited, Toni, "Debt, Liquidity Constraints, and Corporate Investment: Evidence from Panel Data," **The Journal of Finance**, Vol. 47, No. 4 (Sep., 1992), pp. 1425-1460. Stable URL: <http://www.jstor.org/stable/2328946>

- iii. Erickson, Timothy and Toni Whited, "Measurement Error and the Relationship between Investment and "q"," **The Journal of Political Economy**, Vol. 108, No. 5 (Oct., 2000), pp. 1027-1057. Stable URL: <http://www.jstor.org/stable/3078581>
  - iv. Gilchrist, Simon and Egon Zakrajsek, "[Investment and the Cost of Capital: New Evidence from the Corporate Bond Market](http://people.bu.edu/sgilchri/research/gz_may22.pdf)," working paper, May 2007. [http://people.bu.edu/sgilchri/research/gz\\_may22.pdf](http://people.bu.edu/sgilchri/research/gz_may22.pdf)
  - v. Philippon, Thomas, [The Bond Market's Q](http://pages.stern.nyu.edu/~tphilipp/papers/bondq.pdf), forthcoming in **Quarterly Journal of Economics**, working paper, May 2008. <http://pages.stern.nyu.edu/~tphilipp/papers/bondq.pdf>
- b. Micro-level adjustment costs
- i. Bloom, Nick, Steve Bond and John Van Reenen, [Uncertainty and Investment Dynamics](http://www.stanford.edu/~nbloom/uncertaintyshocks.pdf), **Review of Economic Studies**, April 2007
  - ii. Bloom, Nick, "[The Impact of Uncertainty Shocks](http://www.stanford.edu/~nbloom/uncertaintyshocks.pdf)," forthcoming **Econometrica**. Manuscript 2008. <http://www.stanford.edu/~nbloom/uncertaintyshocks.pdf>
  - iii. Eberly, Janice, Sergio Rebelo, Nicolas Vincent, "Investment and Value: A Neoclassical Benchmark, [manuscript](http://kis-nt2/docs/faculty/eberly/htm/Research/research.htm), March 2009. <http://kis-nt2/docs/faculty/eberly/htm/Research/research.htm>
- c. Macro-level adjustment costs/equilibrium
- i. Veracierto, Marcelo, "Plant-Level Irreversible Investment and Equilibrium Business Cycles," **The American Economic Review**, Vol. 92, No. 1 (Mar., 2002), pp. 181-197. Stable URL: <http://www.jstor.org/stable/3083327>
  - ii. Thomas, Julia, "Is Lumpy Investment Relevant for the Business Cycle?" **The Journal of Political Economy**, Vol. 110, No. 3 (Jun., 2002), pp. 508-534. Stable URL: <http://www.jstor.org/stable/3078439>
  - iii. Veracierto, Marcelo, "Firing Costs and Business Cycle Fluctuations", **International Economic Review**, February 2008, 49:1.
  - iv. Caballero, Ricardo and Eduardo Engel, "Dynamic (S, s) Economies," **Econometrica**, Vol. 59, No. 6 (Nov., 1991), pp. 1659-1686. Stable URL: <http://www.jstor.org/stable/2938284>
  - v. Bachmann, Ruediger, Ricardo Caballero, and Eduardo Engel, "[Aggregate Implications of Lumpy Investment: New Evidence and a DSGE Model](http://www.jstor.org/stable/2938284)," working paper, June 2008

7. Extensions and applications of these issues to household finance....

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