

# Current Topics and Modern Financial Markets

module 4, 2019-2020

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## Course information

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**Course Website:** [my.nes.ru](http://my.nes.ru)

**Instructor's Office Hours:** Room 2.11,

**Class Time:**

**Room Number:** 114

**TAs:**

## Course description

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The overall purpose of the course is to engage students into the discussion of current issues and challenges that global financial markets are facing in the aftermath of financial crisis. The course will touch on numerous public policy issues, many of which are politically controversial and most of which are likely to continue to be important for years to come. A goal of the course is to provide students with a framework within which these public policy issues can be addressed in a useful manner.

## Course requirements, grading, and attendance policies

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The course grade will be based on the following: participation in class, tests, regular homework assignments, and a final exam. Homework will be assigned every week. There is no textbook. Reading materials will be provided on mynes.

*Readings:* Students should read assigned materials *before* each class, including the first one.

*In-class Tests:* At the beginning of each lecture (except the very first one), there will be short 10-minute tests with a question about material of the previous lecture. A goal of these tests is to help students not to fall behind on the material and to keep track of attendance. Make sure that you come on time.

*Homework assignments:* Each week students have to read required material and submit a short write-up with their answers on the questions. Don't expect to find all answers in the readings. NOTE: Many readings represent official reports and documents, some of them are very long; as in real life, there is no need to read them line by line, rather those documents can be skimmed through but more important parts must be read carefully.

Write-ups should be succinct and self-contained. Long write-ups are not necessarily good write-ups. Good business writing makes points in a manner that respects the reader's time. Typically, the answers to questions will not be heavily mathematical, but mathematical intuition will often be required to address some of the questions. Write-ups should be uploaded onto mynes at the **beginning of class, including the very first class**. Students have to submit at least 5 out of 7 assignments. If students submit all 7 assignments, then the best 5 are counted towards their final grade. Students should be prepared to discuss and defend the ideas in their write-ups in class. For some questions, there is no "right" or "wrong" answer, in the sense that finance and economics professors themselves are likely to disagree about the answers to the questions. Students may talk to other students about the assigned questions, but each student should prepare a write-up individually, without looking at the write-ups of other students. Each student should list on the write-up the names of the other students with whom the student discussed the write-up.

*Class participation:* Class attendance and participation are required. We will discuss issues that cannot be found in textbooks. Each class several financial concepts or theories studied in other courses and related to our material will be discussed; it would be useful to review them before each lecture.

*Final Exam:* A final 90-minute exam is in-class and closed-book. One double-sided A4 cheat-sheet is allowed.

*Grading:* Grading will be based on case write-ups (20%), in-class tests (24%), and a final exam (50%). Class participation will be taken into account as well. Missing class is strongly discouraged. Write-ups are graded on a scale with the following interpretation: 0=missing, 1=okey, 2=good; 3=great. Tests are graded on a scale with the following interpretation: 0=missing, 1=okey, 2=good.

## **Methodology**

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Students are expected to read material before the class, submit write-ups on assigned questions, and participate in class discussions.

## **Sample of Exam Questions**

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Label each of the following statements as TRUE, FALSE, or UNCERTAIN. For each statement, justify your answer with a few sentences or a brief paragraph.

Warren Buffetts and AIG's derivatives strategies were similar in that both firms conceptually sold disaster insurance, hoping that a disaster would not occur.

## **Academic integrity policy**

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Cheating, plagiarism, and any other violations of academic ethics at NES are not tolerated.

## Course contents

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- I. Financial Crisis, Abacus Deal**
  - Abacus deal as an example of a structured product
  - Causes of financial crisis: Different views
  - European perspective on the crisis, the example of Germany
  
- II. Derivatives - Buffett vs AIG:**
  - Buffett's business model
  - AIG business model
  - Buffett's critique of Black-Scholes model
  
- III. Regulations after Financial Crisis, Stress Tests, London Whale Case**
  - Dodd-Frank Act in the US, MiFID in Europe, Basel III
  - Bank regulation, bank capital and liquidity, cleaning of banking industry
  - London Whale case
  - Stress testing, systemic risk
  
- IV. Government Finance:**
  - State loans and guarantees
  - Public finance and option pricing
  - Financial of government programs
  
- V. Retirement Systems:**
  - Social safety nets, main issues
  - Russian Pension System
  - Debt crisis in Europe and US
  
- VI. Sovereign Wealth Funds and Asset Management**
  - Sovereign wealth funds
  - Comparison with other asset management companies
  - Goldman Sachs vs. Lybia and Malaysia
  - DB mirror trades
  
- VII. Risk Management, Commodities Markets, and Review**
  - Current and future oil prices, how to interpret forward curves
  - Hedging: Metallgesellschaft hedging debacle
  - Price manipulations in commodities market
  - Cash settlement and fixings
  - Corners and squeezes: Silver crisis of 1981, VW squeeze in 2008
  - Risk Management in Russia, barrier options

## Course materials

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### Required textbooks and materials

The course will require a lot of reading of various papers, reports, and official documents. Some of the readings are very long; there is no need to read them entirely from the first page to the last page, those readings can be just skimmed through, but most relevant and important parts have to be read carefully.

“Required readings” marked with stars should be completed before class. Students should come to class prepared to discuss required readings. “Optional readings” not marked with stars are materials students may want to read before class or after class, but they are not required. They may be the subject of class discussion, but the discussion should presume that not all students have read them. The “bedtime readings” are completely optional and include books students may want to read in the future, after the course is finished. They are included for general interest. For each topic, the questions for write-ups are presented. I also included links for interesting video clips. I reserve the right to change the syllabus as the course progresses and some interesting events happen.

Students have to read papers on Abacus case and submit the first write-up onto my.nes.ru before the first lecture!

The schedule of classes follows.

## I. Financial Crisis, Abacus Deal ()

REQUIRED READING:

**SEC Abacus Complaint.**

**Dodd-Frank Summary.**

**Darrell Duffie, “The ABACUS 2007 AC-1 Deal: Structure and Investment Incentives,” SLIDE PRESENTATION, Graduate School of Business, Stanford University April 27, 2010**

**“Charting the Financial Crisis: U.S. Strategy and Outcomes”, September 2018, SLIDES**

**Martin Hellwig, 2018, “Germany and the Financial Crisis 2007-2017”**

*THEORY: Mortgage backed securities, securitization, credit risk management.*

OPTIONAL READING:

Ben Bernanke, 2010, “Monetary policy and housing bubble”.

FCIC report (full text)

OPTIONAL VIDEO: (Senate Hearings on Goldman Sachs Case)

[www.c-span.org/video/?293196-3/investment-banks-financial-crisis-goldman-sachs-chair-ceo](http://www.c-span.org/video/?293196-3/investment-banks-financial-crisis-goldman-sachs-chair-ceo)

[www.c-span.org/video/?293196-1/investment-banks-financial-crisis-directors](http://www.c-span.org/video/?293196-1/investment-banks-financial-crisis-directors)

OPTIONAL VIDEO: (Brookings, Responding to the Global Financial Crisis, 10 years later)

<https://www.brookings.edu/events/day-1-responding-to-the-global-financial-crisis/>

Questions (2-3 pages):

1. What features of the Abacus transaction make it a synthetic CDO squared?
2. According to the SEC complaint, why did Goldman Sachs commit fraud? List arguments of SEC.
3. Does Goldman agree with SEC charges? List arguments of Goldman.
4. Why Goldman ultimately decided to pay fine and settle this case?
5. Based on the summaries of the FCIC report by the majority Democrats and the two summaries by the minority Republicans, who would tend to think that the Abacus transaction is a good symbol of the financial crisis, the Republicans or the Democrats? Why?
6. Why was there so much cross-border lending and investment by German banks and why were their losses so large?

## II. Derivatives - Buffett vs AIG ()

### REQUIRED READING:

**Letter to Shareholders from Warren Buffett, February 27, 2009.**

**Financial Crisis Inquiry Report. Pay particular attention to the sections on AIG: “WELL BIGGER THAN WE EVER PLANNED FOR,” pp. 243–244. “AIG’S DISPUTE WITH GOLDMAN: ‘THERE COULD NEVER BE LOSSES,’ pp. 265–274. CHAPTER 19: SEPTEMBER 2008: THE BAILOUT OF AIG, pp. 345–351.**

**Cunningham Lawrence, 2015, Intermediary Influence and Competition, Berkshire vs KKR**

*THEORY: Value investing, carry trades, CDSs, and Black-Scholes option pricing.*

### OPTIONAL READING:

McDonald, Robert L., and Anna Paulson, “AIG in hindsight”, April 2015

OPTIONAL VIDEO: Warren Buffett’s interview, [www.youtube.com/watch?v=FPkX7S5z5t0](http://www.youtube.com/watch?v=FPkX7S5z5t0)

Senate Hearings on AIG:

[www.c-span.org/video/?281644-1/aig-bailout-oversight-hearing-panel-1](http://www.c-span.org/video/?281644-1/aig-bailout-oversight-hearing-panel-1)

[www.c-span.org/video/?281644-2/aig-bailout-oversight-hearing-panel-2](http://www.c-span.org/video/?281644-2/aig-bailout-oversight-hearing-panel-2)

Questions for Case Write-Up #2 (2-3 pages):

1. According to Cunningham, what is the main difference between Berkshire and KKR?
2. Does Buffett believe that banks are more deserving of bailouts than other types of companies? Why or why not?
3. What are the similarities between Buffett’s strategies and carry trades?
4. Compare Buffett’s letter to shareholders for 2009 (published 2010), p.16 with the financial crisis inquiry report, pp. 243-244. What does Buffett think about AIG management?
5. Explain similarities and differences between Warren Buffett’s business model and AIG’s business model. Issues to consider include leverage, marking-to-market, hands-on management of companies, and perhaps other things (but save options for the next question).
6. One type of business model involves writing out-of-the-money options and hoping to make a profit from doing so. Writing insurance is an analogous strategy. According to Buffett, is this the way Berkshire Hathaway makes most of its money? Is this the idea behind Gary Gorton AIG’s strategy, according to the FCIC report?
7. What does Buffett think is wrong with the Black-Scholes model? Is he correct?

### III. Regulations after Financial Crisis, London Whale Case. ()

REQUIRED READING:

**Report for U.S. Senate, 2013, ``JPMorgan Chase Whale Trades: A Case History of Derivatives, Risks, and Abuses''**

**Frame, Scott W., Gerardi Kristopher, and Paul S. Willen, "The failure of supervisory stress testing: OFHEO's risk-based capital model for Fannie Mae and Freddie Mac."**

**Дмитрий Тулин, 2009, История банка Глобекс как зеркало проблем российского банковского надзора.**

*THEORY: Modigliani-Miller theorem, corporate finance*

OPTIONAL READING:

Board of Governors of Federal Reserve System, Dodd-Frank Act Stress Test 2016: Supervisory stress test methodology and results, June 2016:

<https://www.federalreserve.gov/newsevents/press/bcreg/bcreg20160623a1.pdf>

Kyle, Albert S, "How to implement contingent capital." *Working paper*. 2014

Dodd-Frank Act (full text): [www.sec.gov/about/laws/wallstreetreform-cpa.pdf](http://www.sec.gov/about/laws/wallstreetreform-cpa.pdf)

White paper "Basel III: An easy to understand summary"

OPTIONAL VIDEO:

Senate Hearings on London Whale Case

[www.c-span.org/video/?306502-102/jpmorgan-chase-trading-loss-jamie-dimon-testimony](http://www.c-span.org/video/?306502-102/jpmorgan-chase-trading-loss-jamie-dimon-testimony)

Выступление Эльвиры Набиуллиной на XXV Международном Финансовом Конгрессе

<https://www.youtube.com/watch?v=wl53NjW2w8Q>

Круглый стол по банковскому регулированию, РЭШ, октябрь 2018

<https://news.nes.ru/news/NES-Roundtable-bank-regulation/>

Парламентские слушания на тему: "Об основных направлениях развития финансового рынка Российской Федерации на период 2019-2021 годов, 21.01.2019,

[https://www.youtube.com/watch?v=auYxEOLl3gw&list=PL0TE86Zdvda-wL\\_28Yoqe9Cb\\_fQxEJtA4](https://www.youtube.com/watch?v=auYxEOLl3gw&list=PL0TE86Zdvda-wL_28Yoqe9Cb_fQxEJtA4)

Questions for Write-Up #1 (2-3 pages):

1. According to JP Morgan employees, did JP Morgan plan to make money on its "whale trades"?
2. Is JP Morgan's situation more similar to the situation of AIG during financial crisis or the situation of Goldman Sachs in Abacus case?
3. Based on the summaries of the FCIC report by the majority Democrats and the two summaries by the minority Republicans, who would tend to think that the London Whale case is a good symbol of the financial crisis, the Republicans or the Democrats?
4. What do Frame, Kristopher and Willen think are the main benefits of implementing stress tests? What are potential issues?

5. What do you think about the cleaning up Russian banking system implemented recently by the Bank of Russia? What are main difficulties? What should be priorities?



#### IV. Government Finance ()

REQUIRED READING:

Deborah Lucas, “Credit Policy as Fiscal Policy,” manuscript, November 15, 2011.

Алексей Кудрин и Евсей Гурвич, 2015, Государственное стимулирование или экономические стимулы?”

*THEORY: market risk, interest rate risk, credit risk, subsidies*

OPTIONAL READING:

IMF, 2014, “Russian Federation Fiscal Transparency Evaluation”

Yuri Romannikov, Individual Project, MiF 2015, “Measuring Russian Government Financial Risk”

GAO, 2010, “Financial Assistance: On-going Challenges and Guiding Principles Related to Government Assistance for Private Sector Companies”

CBO, October 2017, “Approaches for managing the costs of U.S. nuclear forces, 2017 to 2046”

**VIDEO:** Debbie Lucas’ talk, “The Government as a Source of Systemic Risk - Deborah Lucas”:  
[www.youtube.com/watch?v=pib0Si9zNlg](http://www.youtube.com/watch?v=pib0Si9zNlg)

Questions for Case Write-Up (2-3 pages):

Think of the government as if it were a “plan sponsor” supervising management of a large portfolio of financial assets, to some extent using in-house managers and to some extent using external managers.

1. How do the risks in the U.S. government’s portfolio compare with the risks in the portfolios of sovereign wealth funds? In particular, think about differences between “upside” (equity) and “downside” (debt) exposures?
2. To what extent does the Fed look like a gigantic hedge fund? To what extent do you think that its objectives and management style might be different from a hedge fund?
3. Compare TARP in the US to a large private equity fund. Do their objectives and management differ?
4. Compare the Russian and US approaches to government subsidies. Think about their size, form, and organization.
5. Should the Russian government provide credit to selective Russian companies or industries?
6. According to Evsey Gurchich and Alexei Kudrin what are the main reasons of slowdown of Russian economy? Would experts from Stolypin club agree with them?

## V. Retirement Systems. ()

### REQUIRED READING:

Алексей Кудрин и Евсей Гурвич, 2010, “Старение населения и угроза бюджетного кризиса”

Евсей Гурвич, 2011, “Принципы новой пенсионной реформы”

Douglas J. Elliott, “State and Local Pension Funding Deficits: A Primer,” The Brookings Institution, December 3, 2010.

Обращение Владимира Путина по пенсионной реформе, 29 августа 2018, <http://www.kremlin.ru/events/president/news/58405>

*THEORY: Immunization, duration, portfolio insurance.*

### OPTIONAL READING:

Kyle, Albert S. and Anna A. Obizhaeva, “Large bets and stock market crashes”. 2014.

Tugkan Tuzun, “Are leveraged and inverse ETFs the new portfolio insurers?”, *Working paper*. 2014.

Ford, Guy, and Maïke Sundmacher, “Leading indicators for operational risk: Case studies in financial services”

“A guide to Understanding the Pension Benefit Guaranty Corporation,” Congressional Budget Office, September 2005.

Рэперы и блоггеры о пенсионной реформе:

<https://www.newsru.com/cinema/16feb2019/bastapens.html>

**VIDEO:** Round table on pension reform: <https://www.youtube.com/watch?v=5Bz9hxIK5gU>

Navalny about reforms: <https://www.youtube.com/watch?v=NWDUGlskBeY>

Questions for Case Write-Up (2-3 pages):

1. To what extent, the levels of retirement benefits provided in the Russian Federation are similar to those in other countries? According to Aleksey Kudrin and Evsey Gurchich, was the Russian retirement system economically balanced and sustainable prior to the reform? Do you agree?
2. What strategy did the government use to communicate the necessity of the reform to public? How effective was this strategy?
3. What should be done to speed up the development of Russian pension plans industry?
4. How should corporate pension plans invest money? Is there a case to be made that corporate pension funds (e.g. a pension plan of Rosneft) should invest only in bonds? To what extent does this case depend on risk and return considerations? What about tax considerations?

5. If falling interest rates are good for bond returns, why might they be bad for the financial status of pension funds, which are heavily invested in bonds?
  
6. If the pension plan invests in stocks, should the risk premium on stocks enter into a calculation of whether the plan is over-funded or underfunded, i.e., what discount rate should we use for discounting cash flows of liabilities?
  
7. Conceptually, how are options involved in thinking about overfunding and under-funding? What role does the pension guarantor (like PBGC in the U.S.) play in thinking about firm's incentives to over-fund or under-fund its defined-benefit pension plans?
  
8. Can pension plans insure their own portfolios? Are there any potential problems with this approach?
  
9. Consider a local pension plan (like pension plans of Puerto Rico or Greece) invested in risky assets to meet future pension obligations. Define a hypothetical insurance policy ("put option") which pays off the amount necessary to meet the future pension obligations if the risky assets in the plan fail to generate enough value to pay all pension obligations. Define a hypothetical ex post pension surplus ("call option") as the value left in the fund after meeting all pension obligations under circumstances when the fund generates more than enough cash flow to meet all obligations. What does put-call parity say about this?
  
10. Watch the youtube video of Alexei Navalny's critique of the pension reform. What points does he make? Do you agree and why?

## VI. Sovereign Wealth Funds and Asset Management ()

### REQUIRED READING:

David Chambers, Elroy Dimson, Antti Ilmanen, “The Norway Model,” October 11, 2011.

Елена Лебединская, 2012, “Роль нефтегазовых фондов в России”

Libya vs Goldman Sachs Case

*THEORY: portfolio optimization, the CAPM, separation theorem, international finance*

### OPTIONAL READING:

JPMorgan, 2008, “Sovereign Funds Primer: A bottom-up primer”

Bloomberg, 2016, “The untold story behind Saudi Arabia’s 41-year U.S. Debt secret”

**VIDEO:** Knut Kjaer’s interview, “In Focus - Sovereign Wealth Funds”:

<https://www.youtube.com/watch?v=GywxDekc1bk>

David Swensen’s lecture at Yale, “Guest Speaker David Swensen”  
[www.youtube.com/watch?v=wRdx7kVNQ\\_E](http://www.youtube.com/watch?v=wRdx7kVNQ_E)

Questions for Case Write-Up (2-3 pages):

Think of the government as if it were a “plan sponsor” supervising management of a large portfolio of financial assets, to some extent using in-house managers and to some extent using external managers.

1. What are the main public policy issues involved into thinking about how to set sovereign wealth funds?
2. What are the differences between the “Norway model” and the “Yale model” of David Swensen (watch video)?
3. Should Norway use the model that Yale endowment uses? Should Yale use the Norway model? Are there reasons why Yale and Norway should use different investment models?
4. Should Russia try to use the Yale model or Norway model, or try to develop its own approach?
5. What are the main lessons for Russia to learn from the Libya vs Goldman case and Malaysia vs Goldman case?

## VII. Risk Management, Commodities Markets ()

### REQUIRED READING:

**Franklin Edwards, 1995, “Derivatives can be dangerous for your health: the case of Metallgesellschaft”**

**CFTC vs Parnon and Arcadia, 2011**

**Bank of England, Fair and Effective Markets Review, June 2013**

*Theories: hedging, risks, forward curves, risk premium*

### OPTIONAL READING:

Bhardwaj, Geetesh, Gary Gorton, and Geert Rouwenhorst, “Facts and fantasies about commodity futures ten years later”, working paper 2015

Baumeister, Christiane, and “The art and science of forecasting the real price of oil”, Bank of Canada Review, Spring 2014

Albert S. Kyle, Cash settlement, price manipulation, and the Modigliani-Miller Theorem, 2007. U.S. Senate Hearings, 2014, Wall Street Bank Involvement with Physical Commodities

### Questions for Case Write-Up #3 (2-3 pages):

1. Why Metallgesellschaft lost money? Did Metallgesellschaft hedge or speculate?
2. How much corporates need to hedge?
3. Would you say that Sberbank’s barrier option were reasonable tools to structure hedges for Transneft and Mechel? What would you recommend to these companies? Are there any similarities between Sberbank’s barrier option strategies with carry trades, AIG’s strategies or Buffett’s strategies?
4. Should a company hedge, if hedging is expensive? For example, if oil is now in steep backwardation, should an oil company hedge its future revenue?
5. Why it may be difficult for risk managers to explain why hedging is useful to CEOs?
6. Based on Bank of England’s Review, what are common themes in recent misconduct cases in FICC markets?

## **Bedtime Reading**

Financial Crisis Inquiry Committee Report (FCIC Report)

Ben Bernanke “The courage to act”

Hank Paulson “On the Brink: Inside the race to stop the collapse of the global financial system”, 2010

Tim Geithner “Stress test: Reflection of financial crises”, 2015

Sheila Bair “Bull by the horns: Fighting to save Main Street from Wall Street and Wall Street from itself”, 2013

Anat Admati and Martin Hellwig “The Bankers’ New Clothes”, 2013

Daniel Yergin “The Prize: The epic quest for oil, money, and power”

Juan Zarate, “Treasury’s war: Unleashing of a New Era of Financial Warfare“, 2015

## **Reading on the History of Financial Economics**

Peter Bernstein “Capital ideas”

Perry Mehrling “Fischer Black and the Revolutionary Idea of Finance”

Fischer Black “Holes in Black-Scholes”, 1988, Risk

Fischer Black “How to Use the Holes in Black-Scholes”, JACF, 1989

Fischer Black “How We Came Up with Option Formula”, JPM, 1989

Mark Kritzman “An Interview with Nobel Laureate Robert C. Merton”, 2017

## **Useful websites:**

U.S.: Brookings Institute, [brookings.edu](http://brookings.edu)

Europe: Bruegel, [bruegel.org](http://bruegel.org)

Russia: EEG, [eeg.ru](http://eeg.ru); Kudrin’s website, [akudrin.ru](http://akudrin.ru); CSR [csr.ru](http://csr.ru)

Bill Longbrake’s letters : <https://www.rhsmith.umd.edu/centers-excellence/center-financial-policy/news-events/news/longbrake-letter>