Investment banking
266: Financial Markets and Institutions

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- **Investment vs. Commercial banking**
  - Traditional distinction:
  - Commercial bank core activities: take deposits, make loans.
  - Investment bank core activity: facilitating large infrequent (for the clients) financial markets deals

    we'll mention a bunch of non-core activities below

- **Aside:: Universal banking**
  - Universal banking is when a firm plays both the investment banking and commercial banking roles.

- **Large deals 1: firms offering shares/debt.**
  - initial public offerings (IPO): some firm sells a particluar security to the public for the first time.

    Snapchat IPO

  - Seasoned offerings

    sell more of some security already trading in the public

- **Large deals 2: Buying and selling whole companies**
  - Mergers: two firms become one
  - Acquisitions: one firm acquires another

- **Note: some big mergers in 2016**

- Proposed and/or underway

  AT&T and Time Warner, $86 Billion; Qualcomm and NXP Semiconductors, $47 Billion; Microsoft and LinkedIn, $26.2 Billion

- Equity deals: a firm sells a portion of itself

  Ford bought Jaguar (acquisition) and subsequently sold it (equity deal)

- Buy outs

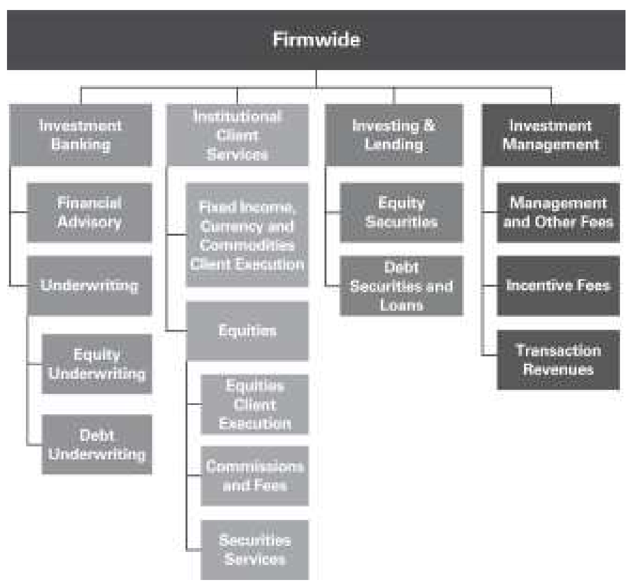
  investors purhase controlling interest, perhaps 'taking the company private'

- Recent examples: Dell, Safeway went from public to private.

▶ **Core vs. non-core activities**

- Traditional investment banking may be a small-ish part of what an investment bank does

▶ **Goldman-Sachs 10-k (2016)**



▶ **Question**

- Q: Where is M&A in those segments?

  A: Financial advisory under investment banking: primary role is advice giving.

- Q: Where are GS revenues coming from by segment

▶ **Segments by revenue**

$ in millions	Year Ended December 2016	2015	2014	% of 2016 Net Revenues
Investment Banking				
Net revenues	**$ 6,273**	$ 7,027	$ 6,464	**21%**
Operating expenses	**3,437**	3,713	3,688	
Pre-tax earnings	**$ 2,836**	$ 3,314	$ 2,776	
Institutional Client Services				
Net revenues	**$14,467**	$15,151	$15,197	**47%**
Operating expenses	**9,713**	13,938	10,880	
Pre-tax earnings	**$ 4,754**	$ 1,213	$ 4,317	
Investing & Lending				
Net revenues	**$ 4,080**	$ 5,436	$ 6,825	**13%**
Operating expenses	**2,386**	2,402	2,819	
Pre-tax earnings	**$ 1,694**	$ 3,034	$ 4,006	
Investment Management				
Net revenues	**$ 5,788**	$ 6,206	$ 6,042	**19%**
Operating expenses	**4,654**	4,841	4,647	
Pre-tax earnings	**$ 1,134**	$ 1,365	$ 1,395	

- **Some non-core activities**
  - Investing for their own account

    borrow money and try to invest it for a profit
  - Managing investments of others

    say, running hedge funds
  - Brokerage services, Market making

    covered when we did how stock market works
  - Financial engineering

    We'll cover this next time. Short version constructing and marketing new securities with a particular risk (e.g., covariance) structure that the public wants for portfolio risk management.

- **Deeper dive on core activities: large deals that are infrequent from the standpoint of one or both parties to the deal**

- **Two main roles**
  - Consulting services and match making
  - Consulting services: One or both parties doesn't do this very often and it's complicated

    Thus, the investment bank specializes in these deals and provides expertise.
  - Matchmaking

There are not a large number of identical buyers and sellers in these deals. Somebody has to make a match.

- **Essence of both consulting and matchmaking**
  - Expertise

    You must know much better than the clients what you are doing
  - Reputation

    Parties to the deals must believe you know what you are doing AND trust you to treat them fairly (not screw them too badly too often)

- **Example: Millionaire Matchmaker**
  - Watch a few episodes
  - As with investment banks, many of the mergers fail (that's the nature of love and business)
  - But expertise and reputation in the particular type of deal are still recognized and valuable.
  - According to Kayla Hawkins of the noted website Bustle!?!:

    Since the show was about the individuals growing and learning. . . , some of the successful dates may have not blossomed into full relationships—but overall, I think Stanger's advice really did help most of the people. . . Because as tough as she can be, she does seem to understand one group's dating needs very, very well: famous people.
  - Cite:

    go

    https://www.bustle.com/articles/182965-which-million-dollar-matchmaker-couples-are-still-together-many-didnt-last-but-pattis-advice-did

- **Aspects of Expertise (in IB)**
  - Knowing the rules, regulations and processes

    of IPO, merger, or etc.
  - Knowing the relevant counterparties

    Who would want to buy large blocks of this new bond or stock? Who might want to acquire this company?
  - Good solid economics

    Being able to help clients evaluate the economic soundness of the deal.
  - This latter involves many of the tools we've been discussing

discounted cash flow analysis, analyzing balance sheets, etc.

- As we'll see below, it also involves many of the most fundamental (Shakespearean) issues in financial markets.

▶ **Let's get into the guts of core activities**

▶ **IPOs/underwriting**

- Investment banks (IBs) generally facilitate IPOs by 'underwriting'
- Bottom line: the IB buys the whole offer from the firm and then sells it to the public
- IB plays consultant role to the offering firm: the IB offers advice on what the firm should do

  e.g., what sort of security to sell, when to sell it

- Helps the firm with all the bureaucratic and regulatory aspects

  Publicly offered securities must meet a number of SEC requirements nicely descibed in the text

- For a debt issue, IB might buy a rating from a rating agency

  such as Standard and Poor's or Moody's

- And then the IB sets a price and buys the entire offering from the firm
- Finally, IB sells the security (for a higher price) to the general public

  a large portion (perhaps all) these sales may have been arranged in advance.

▶ **Underwriting: setting the price**

- If this were a seasoned offering, the firm would have issued similar equity/debt before there would be a secondary market price

  This makes valuation a good deal easier

- For any initial offering setting the price is challenging

  Involves lots of analysis of economic fundamentals.

▶ **Underwriting: A key risk**

- IB needs to sell the issue for more than the price at which it buys.

  Or else it either loses money or gets stuck holding the security

- IB takes several steps to minimize the risk of getting stuck with the issue

  advertises, lines up buyers ahead of time through a network of contacts with major investors

- For big IPOs, IBs generally join with other IBs

  form a 'syndicate of banks'; each bank buys a certain portion of the offer

▶ **IPO: compensation**

- IB gets compensation equal to maybe 2 to 10+ % of the deal.

  depending on the size and complexity of the deal.

- Question: if the perfect markets paradigm held, how much would they earn?

  A: Nothing. The perfect markets assumptions define a case where no matchmaker is needed (lots of buyers and sellers, identical objects).

▶ **Core IB activity: mergers and acquisitions**

- Merger: the two firms meld into one
- Acquisition: one firm swallows another
- Hostile takeover: one firm buys another when the purchased firm's management not keen on the deal
- In a merger/acquisition, existing owners/shareholders may get shares in ongoing firm or get cash

▶ **Role of investment bankers**

- Investment bankers play an advisory role helping the acquiring firm structure the deal
- Help the acquiring firm to value the deal and to find and make the case for valuable deals
- And help them structure any credit required to finance the deal
- Firms resisting takeover may also hire investment bankers

▶ **LBO**

- If the buying firm borrows heavily to buy the target firm we call this a leveraged buyout (LBO)
- Because this is generally risky: you are gambling that the firm (after some changes) is worth more than you buy it for.

  Indeed, must be worth a lot more, because you have to pay off those loans.

- Often funded by junk bonds

  junk bonds: bonds with ratings below investement grade

▶ **Central issue in IPOs and buyouts: value of goig from public to private and vice versa**

- **Public or private**
  - The economics of being public or private is fascinating and a key bit of the economics IB's deal with
  - We used to think that a natural progression was that as you get bigger you naturally decide to go from private to public
  - There are arguably big shifts regarding the costs and benefits underway in the U.S. right now.
  - And this gets at the very heart of the Shakespearean issues we've discussed since day 1.
- **Cost/benefit to going public**
  - Benefit: gain access to a larger pool of capital

    Aid in mobilizing savings of a broad array of savers to advance the economy.
  - Cost: Principal-agent problems

    As Adam Smith said, the managers will screw off
  - Thus, we get all sorts of rules and regulations on public reporting (as suggested by J.S. Mill)

    this lowers the cost to the public of monitoring the firm behavior
  - But all these regulations are costly and may become such a pain that firms want to stay private.
- **Today**
  - There may be a big shift on these issues
  - Nice article: Take this market and shove it.

    Geoff Colvin, Fortune, 2016 go

    http://fortune.com/going-private/
  - –

    Public companies aren't going away, but they're becoming fewer and bigger. The result is an environment much different from that of the past 50 years, giving larger roles to private companies with their own distinctive ways of doing business, paying employees, and managing for the future.
  - –

    So why go public? Especially when you consider the many disadvantages... The process itself is costly. Underwriting and registration costs average 14% of the funds raised, says IPO expert Jay Ritter of the University of Florida.
  - –

    Offerings are usually underpriced so as to produce a first-day 'pop,' but that means lots of money is left on the table, on average about 15%, say researchers.

- Just why this is so is a deeply studied buy unresolved issue
- –

  Public companies face additional rules, notably those imposed by the Sarbanes—Oxley and Dodd-Frank laws. . .

- The article also discusses the benefits of having owners more closely involved in the running of the business.

▶ **Let's move on to a deeper look at reputation**

▶ **Asymetric information**

- As a rule of thumb, if anybody is getting rich in financial institutions, it is because they are are helping overcome asymetric information.

  Well, either that or they are cheating in some way.

- People get rich in investment banking because of the large asymmetric information between buyers and sellers in these big deals

▶ **Example: IPO**

- A widget firm that has been privately owned (say, a partnership), and wants to 'go public' by selling shares.
- What are the asymmetric information problems?
- The firm makes widgets, but is not expert in IPOs:

  How do I do this? What are the rules? How will I know if I'm getting a fair price? Is this a good time to try to sell shares?

- Potential buyers:

  Who are these guys anyway? They have no track record, why should I buy the shares?

- Moral hazard:

  The potential buyer says: I read my Adam Smith, the moment these managers sell shares, they'll start screwing off.

- Adverse selection:

  Buyer says: If the firm were really going to be profitable, the partners would want to keep the partnership. They are only selling because something is wrong.

▶ **Positively Shakespearean:**

- Could easily lead to a 'neither an IPO seller nor buyer be' situation.

▶ **Investment bankers and IPOs**

- Thus, buyers and sellers don't trust each other because they inherently have very different information about the deal.
- The investment banker steps in as a the counterparty to both the selling firm (IB buys the whole offer) and to the buying public (IB sells to the public)
- IB can overcome asymmetric information in buying the offer the old fashioned way: it carefully studies the firm
- But why does the firm trust the valuation of the IB?
- And why does the buying public buy this untested security?
- One main reason: IB reputation.

  The IB has a track record for not screwing either side (or not screwing them very much very often.)

▶ **If you are in the matchmaking business and either side loses trust, you are not going to survive.**

▶ **Case study: Bear-Stearns**

- Before the crisis, Bear-Stearns was one of the biggest free standing investment banks.
- The collapse of Bear-Stearns in Mr. 2008 might now be seen as marking the beginning of the acute phase of the crisis.
- Feb 07

  Credit Suisse upgraded Bear Stearns to outperform from neutral and raised its price target to $190 from $172. "Bear Stearns is a well run franchise. Returns may lag peers in the most favorable of markets but prove more resilient in a downturn," Credit Suisse said. go

  http://www.marketwatch.com/story/daimlerchrysler-coca-cola-bear-stearns-in-the-spotlight

- June/July 07: 2 mortgage-backed securities hedge funds run by Bear Stearns go broke
- NYT June 23,07:

  Bear Stearns Companies, the investment bank, pledged up to 3.2 billion dollars in loans yesterday to bail out one of its hedge funds that was collapsing because of bad bets on subprime mortgages.

- Note: Bear was just running these hedge funds.
- It didn't have to bail them out.
- Why did it do the bail out?
- NYTimes, June 23, 2007

  Bear Stearns is bailing one of the funds out because it is worried about the damage to its reputation if it stuck investors and lenders with big losses, said Dick Bove, an analyst with Punk Ziegel & Company. If they walked away from it, investors would have lost all their money and lenders would have lost all of the money, Mr. Bove said. But if they did that to everyone in the financial community, the financial community would have shut them down.

- NYTimes, June 23, 2007

  > Shares of Bear Stearns closed down $2.06, to $143.75; the stock was down more than 4 percent for the week.

- Wow. Down 4 percent, that's really bad!
- Fri, March 14, 2008: the end
- Over the weekend: NY Fed arranges a govt. backed sale to JPMorgan Chase

  > $10 per share

- That's down from Credit Suisse's target of $190 in Jan. 07,
- Reputation really matters

▶ **Case study 2: Goldman and the Fab**

▶ **Goldman and the Fab**

- From Goldman Sachs website

  > Our clients' interests always come first. Our experience shows that if we serve our clients well, our own success will follow. Our assets are our people, capital and reputation. If any of these is ever diminished, the last is the most difficult to restore. go
  >
  > http://www2.goldmansachs.com/our-firm/our-people/business-principles.html

- GS recently settled a case with SEC

  > Paid $550 million... which is starting to be real money

▶ **Adam Smith and Shakespeare**

- Goldman went public in 1999.
- Was a significant player in the financial crisis less than 10 years later.
- Over a weekend soon after the Lehman Bros. collapse, Goldman and Morgan Stanley both were hastily transformed into bank holding companies

  > So as to come under the protections that Fed affords commercial banks.

- One upshot in the aftermath was the $550 million payment.
- Experts are still sorting out what Goldman (and Morgan Stanley) may have been wrong and to what extent going public may have changed the culture to allow the problems.
- I am not taking a stand on the facts here, but I am saying that this is an important issue and reflects exactly the same Shakespearean tensions we've been discussing since day one.

▶ **Short version of GS and the fab**

- Near the end of the subprime boom some folks realized that things were about to crash
- In particular, a few folks realized the market was paying too much for what were pretty iffy financially engineered assets that were backed by subprime mortgages.

  CDO's and CDO-squareds (collateralized debt obligations)

- These folks realized they could get rich betting against such securities
- This is the story in The big short.

▶ **Aside:: Question**

- What is short selling?
- You sell a security that you don't actually own
- At some point, you will have to buy the security and deliver it in order to finish this deal

  'cover your shorts'

- If the price has fallen in the interim, you make money, otherwise you lose

▶ **Betting against subprime**

- You could bet against subprime mortgage backed CDOs by selling them short
- Or alternatively by buying (underpriced) default insurance on them

  using credit default swaps

- The default insurance was too cheap because other folks (AIG as it turns out) had not figured out that these assets had a nontrivial risk of defaulting

▶ **Note:**

- So far nothing unsavory is happening
- The actions of folks trying to profit in this way tends to drive the price of the securities down and move us to more efficient, 'more nearly correct' prices.

▶ **But...**

- I could speed up the process of getting rich if I could secretly create some assets that are really bad and will die quickly.
- Some folks (John Paulson), the story goes, came to GS wanting to create a securities backed by particularly crappy bundles of mortgages

▶ **The scheme**

- Paulson hires Goldman to create the crappy asset
- Goldman uses its reputation to sell this to the public
- Then Paulson bets that the asset will fall in value

▶ **The Paulson view:**

- WSJ:

  In January 2007, a Paulson employee explained the company's view in an email, saying "rating agencies, CDO managers and underwriters have all the incentives to keep the game going, while 'real money' investors have neither the analytical tools nor the institutional framework to take action" go

  http://online.wsj.com/article/SB10001424052748703757504575194521257607284.html

▶ **Key aspects**

- Asymmetric info: the ultimate investors don't deeply understand the product.
- Matchmakers and institutions that facilitate matchmaking earn fees by getting deals done.

▶ **Crucially**

- The matchmakers were willing to gamble their reputations.
- Part of the reason the ultimate buyers bought these sketchy assets was because, e.g., Goldman (with its very strong reputation) was pushing the stuff

▶ **Enter the fabulous Fab**

- Fabulous Fab was a Goldman employee (about 30 yrs. old) who helped put these deals together and sold them to the public
- Fab was clearly immature and stupid in various ways.

  For example, he used company email to describe is unsavory activities

▶ **Aside::**

- If you learn nothing else in this class learn: Emails, tweets, texts, etc. live forever and are subject to legal discovery.

  ...even those emails you send to impress your potential romantic partners

▶ **The Fab**

- WSJ:

In an email he wrote to an associate cited by the SEC, Mr. [Fabrice] Tourre wrote: "More and more leverage in the system, The whole building is about to collapse anytime now... Only potential survivor, the fabulous Fab... standing in the middle of all these complex, highly leveraged, exotic trades he created... go

http://online.wsj.com/article/SB10001424052702304180804575188060696896860.html

- the Fab, June 2007

  Just made it to the country of your favorite clients [Belgians]! I'm managed (sic) to sell a few abacus bonds to widow and orphans that I ran into at the airport, apparently these Belgians adore synthetic abs cdo2," go

  http://www.nationalpost.com/m/story.html?id=2952294

▶ **Two Questions**

- 1. Illegal or at least subject to civil penalties?

  some aspects still being resolved, but it seems yes.

- 2. Bad business

  A very big yes.

- As an underwriter, if folks think you are systematically omitting relevant info. (even if you are not legally bound to reveal it) you are going to have trouble continuing in business

▶ **Bottom line**

- IB core activities: Matchmaking in large financial deals
- Key elements:
  - Expertise at what makes a good deal
  - Reputation.