Principles of Financial Regulation

LAWS6345

2021

FOUNDATIONS

1. The Financial System

This topic introduces the main mechanisms by which savings are channelled into corporate investment: financial markets and financial institutions (or intermediaries). Our first goal is descriptive: simply to understand the terrain of the landscape. Our second, and more important goal, is analytic: to be aware of the limitations in the functioning of each mechanism. This analytic discussion will help us to understand the rationale(s) for regulatory intervention.

I. Motivation

- Financial systems allow for:
  - The mobilisation of savings to deploy them to productive projects with returns on these investments.
  - The facilitation of payment. Exchange of money without physical transactions.
  - The allocation of investment: make decisions about which investments are worth pursuing.
  - The monitoring of performance of investments over its life.
  - The management of risk: offsetting of risks from one party to another party better able to bear it.
- A country without a financial system is a country that misses out on these many benefits.
- The financial system's significance is found in the functions it performs in relation to the real economy. It intermediates between the personal sector and the corporate sector.
- The capital markets serve to allocate funds to projects which firms wish to pursue, eg: when new securities are issues to fund a new project. Secondary markets have the benefit of providing liquidity for investors – they can exit their position quickly if they need cash to meet liabilities in the short run.
- What happens if the financial system fails?
  - The consequences of financial crises are manifold. Total investment over time declines, industrial production declines.
  - Recovery is often slow and the recession is deeper than if the recession was not caused by a financial crisis.
- Can there be too much finance? Does it follow that the bigger the financial system is, the more significant the benefits for society are?
  - Arguably not. The financial sector has grown relative to the economy as a whole.
  - This growth has exceeded overall GDP growth, implying a less than commensurate increase in societal benefit from growth of the financial system.
  - An inverse u-shape of the benefits of growth in the financial sector.

- After a certain point of size, it may be detrimental: increased risk, attract talent away from other sectors…

II. Classical Components

A. Banks

- Financial Intermediary: it has its own balance sheet, interposes between savers and borrowers.
  - Savers deposit savings in the bank in return for a claim against the bank to have the money repaid on demand. It must be liquidated on demand.
  - Savings are used by the bank to invest: lend to borrowers. Loan contracts are the bank's assets. Illiquid – not easily convertible into cash.
  - Banks mobilise savings and facilitate payment (chose in action of the depositor is assigned to party they wish to pay, followed by settling between the banks of the parties)
- Why would depositors use banks?
  - *Diamond and Dybvig* (1983): Liquidity Insurance.
    - Households with surplus cash seek return and secure storage.
    - However, they want the savings to be liquid to guard against shocks.
    - Liquid investments pay lower returns.
    - If many households pool savings, the total fund can be invested in illiquid investments that pay high returns.
      - Fraction of cash kept on hand to meet demands.
      - This strategy depends on liquidity shocks not being perfectly correlated. They need to be idiosyncratic.
- Bank's relationship with firms: bank chooses which investments to make and monitors investments.
  - What makes banks the institution to allocate investment? Why do banks lend? Why not investors lending directly?
    - Asymmetry of information between firms and investors.
    - Diamond (1984): the 'delegated monitor theory'. The bank captures economies of scale in monitoring borrowers.
      - The bank can lower the overall portfolio risk by lending to many different borrowers.
      - Diversification of assets – lower risk (so long as all borrowers do not face shocks in a correlated manner)
      - The bank transforms high risk process of lending to borrowers directly into a low risk process by being an intermediary.
      - Peer2Peer Lending: tries to circumvent the banks.
- <u>The bank combines deposit taking (offering immediate liquidity) and makes loans long term to generate returns.</u>
  - Maturity Transformation: These functions are combined as deposit finance (short term) is cheaper than long term finance.
  - The bank makes profit in this way. From the spread between returns on investment and interest paid to depositors.
  - Most borrowers that the bank makes loans to don't fully draw down their lines of credits. The banks can thus use the same reserves of cash for more drawdowns.

    - This combination of short term finance and long term assets can make banks vulnerable to runs.
- The Fragility of Banks and Runs arises from its combination of Credit Transformation and Liquidity Transformation: a large number of depositors simultaneously want to withdraw their holdings.
    - The bank can become insolvent – it is unable to meet its debts to its depositors as it does not have enough reserve cash.
    - The bank will be forced to liquidate its illiquid assets. The bank will make a loss in this process at firesale prices. If the bank was not insolvent then, it will be now.
    - If the bank held these, they would have made a profit.
    - Thus runs, triggered by panic and fear, is a self-fulfilling prophecy.
    - Contagion: Banks are interconnected – lending and borrowing to one another to settle payments.
        - A run on one bank can quickly spread system-wide. Depositors might infer that weakness at one bank will lead to weakness in another bank that is connected with it.
        - A loss at Bank A is multiplied throughout the banking system.
- Policy Responses to the Fragility of Banks:
    - Central Bank as the Lender of Last Resort for banks facing liquidity problems.
        - Central Bank purchases assets and pumps liquid cash into bank balance sheets.
    - Deposit Insurance: if a bank fails, the depositors are paid in full from an insurance fund.
        - Removes incentive to run on the bank.
    - Bailouts: public funds are invested into a bank to prevent contagion.
        - Public funds used to address insolvency.

B. Financial Markets

- What is special about a financial market?
    - A ‘product’ in this market is the right to receive a stream of future payments.
    - The value of the product depends on future events.
    - Markets are largely secondary: transactions do not directly affect resource allocation. The parties are often both investors.
        - The Bond has already been issued, the resources have already been allocated.
        - The rights to that bond are now being bought and sold.
    - The prices in the market send signals to firms about what investors think about the quality of investment decisions that managers are making.
    - What managers do is information that is revealed in the market.
- **Informational Efficiency/Efficient Capital Market Hypothesis**: the extent to which the market price fully reflects available information.
    - The Semi-Strong Form: that the price reflects all publically available information.
        - Price is an unbiased estimate of the value of the security.
        - One cannot systematically make money by trading based on information as it has already been factored into $.

        - Price movements are random, uncorrelated to prior movements. Past performance can provide no guide to likely profitability of holding that asset in the future.
        - New information in the future, cannot be predicted, cannot be priced in.
    - Markets are efficient in impounding all information that is available from the history of past movements of share prices (weak form) and public announcements (semi-strong form) but not the information to which insiders have privileged access to in relation to other investors (strong form)
    - An implication for the role played by professional money managers.
        - If money cannot be made by trading because of the randomness of prices, then what value do these professionals add?
- Why does Informational Efficiency matter?
    - Fosters liquidity: if I believe that the $ reflects all available information, I will not worry that other parties trying to sell to sell to me have information that I do not have. This in turn helps to further mobilise savings.
    - Ensures that $ reflect a best estimate of the value of the firm's activities.
        - Helps to best select and monitor investment projects.
    - If prices are mispriced (informational inefficiency) then the real cost is a misallocation of resources. There is a further loss that stems from informational inefficiency – less investors willing to participate, liquidity declines.
- Financial Markets can thus mobilise savings, allocate resources to projects, monitor the performance of managers and facilitate risk management.

III. Modern Combinations

- How to banks and markets interrelate?
- The 'Puzzle':
    - Old View (pre-GFC): Parallel Systems Approach.
        - Banks and Markets are separate.
        - Each have their own separate functions.
        - Banking and Securities Regulation are separate.
    - New View (post-GFC): All interconnected.
        - There are even hybrids where there is continuous innovation.
- Under Parallel Systems View we could consider Market Based Finance and Bank Based Finance
    - Market Based: Investors bear risk.
        - Savers buy securities to mobilise their savings. Returns on these are variable.
        - Informational efficiency: fosters liquidity.
        - Investors bear the risk. They can diversify by investing in range of securities.
        - Little systemic risk as it was spread across many investors.
    - Bank Based Finance: banks bear risk.
        - Savers buy deposit claims. Returns are fixed (interest rate on deposit)
        - Monitoring not in price, but delegated to banks who select investments.
        - Information in opaque as banks keep information to themselves.

        - This fosters liquidity in that all parties are equally uninformed about the quality of bank promises to pay deposits.
        - The banks bear risk – systemic risk.
- Policy makers in the late 90's and early 00's thought that the solution was Market Based Finance – to diffuse risk among investors.
    - Encouragement of financial market growth. As they grew, firms could turn to them to raise finance in the form of binds instead of going to the banks,.
    - Banks under competitive pressure: changed behaviour to connect themselves more to the financial system.
    - The largest financial institutions are even now asset managers such as BlackRock and Vanguard.
- The growth in markets stimulated by the belief that risk was spread.
- Banks responded to competition by innovating.
- They developed new products: Loan Securitisation.
    - Individual Mortgages were packaged into new assets and were given ratings by Independent Agencies.
    - The Institutional Investors bought these assets that were tied to the bank's mortgages.
    - Risks for the bank – spread out risks to the Institutional Investors.
- In reality, Securitisation created new opportunities for Contagion. Many of the underlying loans were of low quality – subprime borrowing.
- Loss Multiplication: Defaults in subprimes through to the losses to the wider system.
    - The root of the issue was that the Parallel Systems view was wrong.
    - The Interconnected System was vindicated.
- There were four channels of contagion that led to the multiplication of losses:
    - The transfer of risk from banks to markets was incomplete.
        - Issuing banks guaranteed securitisation.
        - SPVs that collapsed were taken onto the books of the banks.
    - Financial Conglomerates: investment bank underwrites securitisations issued by subsidiaries.
        - Losses in one arm of the group triggers runs on other arms.
    - Collateral offered by investment banks
        - Some of the securitised loans were used as collateral for short term borrowing by the investment banks to fund activities.
        - AAA tranches were accepted by many investors who thought they were safe. These were usually very risk-averse parties.
        - When the bubble first burst, banks faced funding issues as lenders realised AAA were not actually safe.
    - Synthetic Securitisations
        - Bundling together of tranches of different gradings of mortgages.
- New Developments:
    - Peer to Peer Lending. 'P2P'
    - P2P is a platform. It does not interpose its balance sheet but rather brokers between savers and borrowers via technology.
    - Each participant enters into parallel contracts through technology. Each saver who lends into the platform are able to diversify without the need for an intermediary.
    - Lenders could choose with borrowers they will provide funds to and on what terms. (more of a market-based model where lenders needed info to judge for themselves)

- The platform now uses algorithm to assess the credit quality of the borrower and offers this information to the lenders. (less transparent, the platform assess info themselves and passes on summary to the lenders)
- Credit Transformation (brings together many lenders into pool) without Liquidity Transformation. Supposedly without the inherent risk of the banks and runs that spring from combining the two.
  - Lenders understand that it might make time to exit the market.
  - No prospect of a run as the lenders are not promised immediate liquidity.

Required reading
PFR, Chapters 1, 2, 5, 13

R Stulz, 'FinTech, BigTech, and the Future of Banking', (2019) 31 Journal of Applied Corporate Finance 86-97.

- How FinTech is likely to affect the future of banking and banks.
- FinTech definition?
  - FSB: "technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services."
  - *But for purposes of this article, there is a more appropriate definition: financial innovation that is based on the use of digital technologies and big data. The use of digital technologies makes it possible to provide many existing financial services more efficiently and to enhance these services*. (86)
- BigTech: tech companies with established presence in the digital services market. Amazon, Google, FB, Twitter, Alibaba, TenCent etc. They are increasingly making in roads into financial services in China but not yet in the USA.
- FinTech firm: usually target a niche area
- BigTech firm: have the ability to challenge the bank across a large number of product lines.
  - Huge advantage of consumer data base and data analytics. Can offer better tailored products.
- A typical large bank is best viewed as a portfolio of activities.
  - Most of these activities are or could be undertaken by nonbanks
  - For instance, nonbanks, like consumer finance companies, hedge funds, and private equity funds, all make loans.
  - However, nonbanks do not offer demand deposit accounts.
  - With deposit accounts, banks offer safe, liquid claims that are instantly redeemable.
  - To offer deposit accounts, banks must gain the trust of their customers that these deposit accounts will always be instantly redeemable.
  - Deposit insurance helps them win and maintain that trust.
  - Banks compete with nonbanks for deposits, but nonbanks cannot offer deposit accounts that have all the benefits of bank deposit accounts.

- Banks are subject to regulation due to systematic importance but FinTech firms are not and so they can conduct bank-like activity at a lower cost. Regulation that protects the banking system ends up helping FinTech.
- The key ingredients of FinTech are:
    - Data
    - Computing
    - Interface
- Payments, Digital Lending, Digital Banking, Digital Investment Management and Personal Finance
- Reasons that FinTech firms can be expected to take market shares in some businesses that banks are currently active in:
    - Regulation of Banks
        - Capital requirements for banks mean that products are more costly
        - Key issue is whether banks and FinTech firms face significant differences in regulatory costs for undertaking the same activities.
    - Legacy IT Systems
        - Banks have aging IT systems that are often indecipherable today. Data also not organised in a way that it can be mined. Higher maintenance costs and replacement of the system entails massive risk.
    - Organisational Frictions Inherent in Diversified Firms
        - FinTech firms have no past and organizational inertia to hold them back. More open to letting customers guide the design of products. Digital technology has an 'in built' economy of scale. Marginal cost of one more consumer is trivial.
        - Banks are more invested in existing models and slower at innovating. Regulation further hampers this.
        - Various parts of the large bank might see tech innovation as a threat to their practice.
- Advantages that the bank retains are its large base of consumers, reputation, experience in dealing with regulators, broader product offerings.
- Risk that increased competition will push banks to take more risks or reduce operating costs.

Further reading

A Salz, *The Salz Review: An Independent Review of Barclays' Business Practices* (2013), **pp. 20-37**

- Large numbers of people have a tenuous understanding of their own finances. This raises the question of how far the principle of caveat emptor should apply to the consumer market or whether there should be some F obligation to banks if they are to offer suitable products. (20)
- Poor product selection, lack of awareness of risks and weak financial literacy, lack of planning ahead. (21)
- The need for banks to worry about their public legitimacy given that they receive support from government.
    - Banks provide services that have long term consequences for consumers.
    - Consumers want banks to take on advisor role and F role – duty to help customers understand how they can increase wealth and achieve long run prosperity while also reducing risk of loss.
    - However banks operate not as advisers but as principals and as organisations to deliver gains to shareholders, not customers. (22)

- Public debate has swung to sharp criticism of banks however, the author notes that "banks as institutions are essential to the smooth running of our economy and as an aid to our economic prosperity, and we should distinguish the importance of the institutions from the behaviours of some individuals." (22)
- "Given the special position banks have in society and the potential risks they represent should things go wrong, politicians, regulators and central banks have developed a series of legal and regulatory requirements." (23)
- And yet implicit government guarantees for banks regarded as TBTF are argued to have made some banks insensitive to risks that they take on. (23)
- A proposal for reform of the approach to financial regulation?
    - Separation of risky bank activity from retail activity Rules in the Dodd-Frank Act such as the Volcker Rule that prohibits banks from engaging in proprietary trading. (23)
    - Reforms to corporate governance in order to reduce the perceived causes of past problems to lower systemic risks. However, the next crisis may have different causes. (24)
- There has been a marked increase in compliance efforts however there is a new risk coming out of this: the risk that bankers that follow detailed sets of regulations will lose the ability to make good judgements in novel situations not covered by the rules.
    - Therefore, the author recommends that "a clear set of values" are needed to "develop culture" which will ensure good banker behaviour in all circs. (24)
- Deregulation: led to the growth in financial services, investment and spurred the increasing size and complexity of financial firms.
- Combination of deregulation , increases in liquidity and low interest rates fostered greater risk taking, higher leverage ratios, increased use of derivatives. (25)
- "Many of the banks which experienced the greatest difficulties seem to us to have suffered from a combination of control and risk management failures, exacerbated by cultures favouring aggressive growth, and often compounded by governance weaknesses.(25) "
- Barclay's Evolution: Failed to develop a strong culture that could have avoided some unacceptable business practices. (28)
- Barclay's Group constantly changing shape with frequent changes in the scope of its business units. This presents a regulatory challenge.
    - "While most companies reorganise from time to time, it is inherently difficult to develop robust governance and control structures in organisations that undergo frequent structural change, as different operating models require different enablers (e.g., management information flows between Group Centre and business units), which require time to be put in place. " (37)

RJ Gilson and RH Kraakman, 'The Mechanisms of Market Efficiency' (1984) 70 *Virginia Law Review* 549, **pp. 549-592 :** a focus on the distribution of information as a determinant of K market efficiency. Implications for the structure of the market for information – the distribution of info among traders is a function of info costs. Effort to explain how the capital and information markets jointly operate to determine the relative efficiency of securities prices.

- The Efficient Capital Market Hypothesis (ECMH) widely accepted in academia, the law and finance. "ECMH is now the context in which serious discussion of regulation…takes place" (550)
- Authors ask a more fundamental question of "what makes the market efficient when it appears to be so?" (551) Despite there being a body of empirical evidence supporting ECMH, there is a search for the causative theory (552)
- ECMH predicts that even though information is not immediately and costlessly available to the market, the market will act as if it were so (552)
- So how can the market behave efficiently despite the fact that information is costly to obtain and process. There remains a lack of a unified explanation of market efficiency. (553)
- There are several K market mechanisms that have been offered as causal explanations for market efficiency. Which mechanisms operates on a particular piece of info and how efficient the K market is wrt that info will depend on the initial distribution of information among traders. (554)
    - These mechanisms are "trading processes that…forces prices to a new, fully informed equilibrium" (565)
    - There are different mechanisms that each operate over information sets of particular availability to market traders
    - What is the repertoire of mechanisms to explain the incorporation of new information into equilibrium prices? (566)
        - Universally informed trading: ranges over all "old" price information together with information about current events into a single set.
        - Professionally informed trading: minority of knowledgeable traders who trade at volumes that ensure rapid assimilation into price of information. Thus any information that they have can be called "public" (572)
        - Derivatively informed trading: enhances efficiency and erodes insider advantage as by trading on "informational leakage" (572)
            - Trade decoding: uninformed traders clean info by observing informed trades
            - Price decoding: Volumes of inside trades indicate to uninformed traders that there is new information.
        - Uninformed trading: aggregation of uninformed forecasts leads to a pool of information – random biases of individual forecasts leaving price to reflect a single, best informed aggregate forecast. (581)
    - For any initial distribution of information in the market, one of more of these mechanisms facilitate the reflection of information in price. These mechanisms are complementary and each functions over a characteristic segment of initial distributions of information among traders. (588-9)
- Prices at any time 'fully reflect' all available information, therefore there cannot be profitable trading strategies.
    - "prices fully reflect"